Soap

SALES-WINNING AROMATICS

The value of the aromatics you use in your soaps can be judged by their effectiveness in creating sales. That means that the odors must not only be attractive and up-to-the-minute in style, but also of a character that keeps its freshness and charm.

The value of Givaudan aromatics can be judged by the growing number of soap manufacturers who are using them to create sales—and to hold the customers who buy their products. Our staff is always ready to give you expert cooperation in adapting the never-ending supply of new and interesting aromatics that are brought forth by Givaudan research.

Givaudan

DELAWANNA, INC.
330 WEST 42nd STREET, NEW YORK, N. Y.

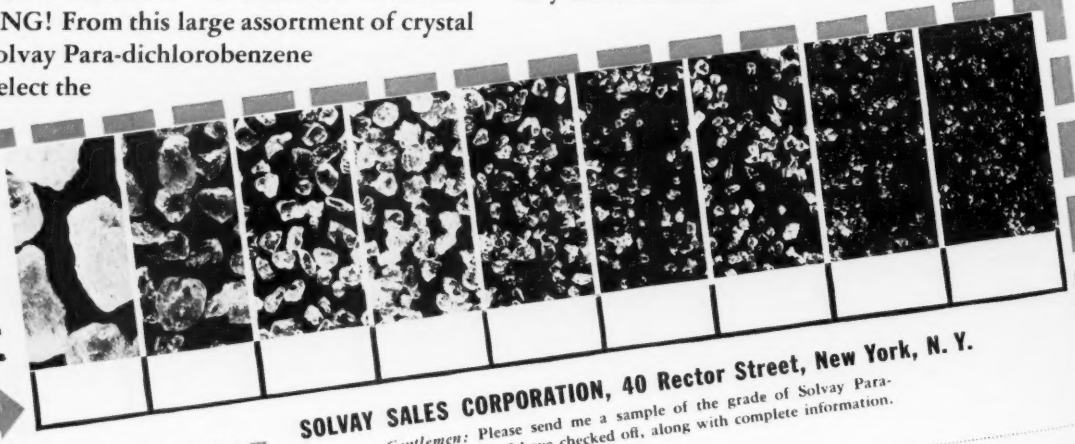
...nd Sanitary Chemicals

SIGN ON THE DOTTED LINE FOR 1941!

... And Get the Advantages of SOLVAY'S MANY CRYSTAL SIZES OF PURE PARA-DICHLOROBENZENE

Before you sign up for next year's supply, remember that SOLVAY MAKES AVAILABLE TO YOU ALL THESE *STANDARD* CRYSTAL SIZES OF PURE PARA-DICHLOROBENZENE —WITHOUT DELAYS—WITHOUT SPECIAL ORDERING! From this large assortment of crystal sizes of Solvay Para-dichlorobenzene you can select the size that meets your *exact* requirements for avoiding wastage in manufacturing blocks . . . the size *exactly* suited to your transparent or other packaging . . . the *exact* size for any other use you may have in mind.

YOU CHECK THE GRADE



WE'LL DO THE REST

These photos are actual size. We will send you a sample of the grade you check off . . . send you complete information on Solvay Para-dichlorobenzene . . . or if you are uncertain of your requirements, our technical staff is ready to help you select the most efficient grades for your particular purposes. Make use of Solvay service!

FILL IN THE COUPON NOW!

SOLVAY SALES CORPORATION, 40 Rector Street, New York, N. Y.

Gentlemen: Please send me a sample of the grade of Solvay Para-dichlorobenzene I have checked off, along with complete information.

Name.....

Company.....

Address.....*State*.....

City.....

AJ-1040

He Looked for Something Better 'Til They Tied Up With FULD'S FLOOR TREATMENTS

¶ He discovers that Fuld-made Floor Seals and Treatments are his key to all maintenance sales. That stimulating knowledge works for him and for his company.

¶ Nothing spurs the enthusiasm of salesmen like the sales-making acceptance of the key products that earn his bread and butter.

FULD MAKES IT FOR THE LEADERS IN BULK or packaged under PRIVATE LABEL

Selling Jobbers ONLY!

DEODORANT BLOCKS
LIQUID DEODORANTS
LIQUID CLEANERS
LIQUID SOAPS
OIL SOAPS
INSECTICIDES
DISINFECTANTS
SELF POLISHING WAXES
PASTE WAXES
POWDERED WAXES
FLOOR SEALS
FLOOR TREATMENTS
METAL POLISHES
FURNITURE POLISHES
PLUMBING SPECIALTIES
SPECIAL CLEANERS
SOAP DISPENSERS
DEODORANT BLOCK HOLDERS

FULD BROS.

702-710 SOUTH WOLFE STREET BALTIMORE

SALES OFFICES: SEATTLE • KANSAS CITY • SAN FRANCISCO • BOSTON
METROPOLITAN NEW YORK OFFICE: 127 TROUTMAN ST., BROOKLYN, N. Y. TELEPHONE: EVergreen 8-2498

"DYGEX"

A NON-CAUSTIC GREASE AND OIL REMOVER

oncentrated compound produced to remove accumulated oil and greasy dirt from concrete surfaces. It mixes perfectly with kerosene to form a powerful, yet on that quickly dissolves and emulsifies grease

A CLEAN MOTOR RUNS COOLER!

ush or spray the motor block with a solution of 1 part of DYGEX to 6 parts almost see the grease liquifying. Flush off with water

OR DE-GREASING CHASSIS AND WHEELS

and running gear may be quickly cleaned by the same method and NE mix. Spray or paint on the solution and flush off the grease with running gear and wheels will help the appearance and saleability

CLEAN AND DE-GREASE PARTS

side. In one tank put a solution of 1 part of DYGEX and 4 to k is filled with plain water. Dip the parts to be cleaned in with a brush if necessary to remove accumulated grease g water to rinse them off. If hot water is used, parts will

LOORS LOOK BETTER

oil and grease stains quickly removed with DYGEX parts of kerosene. Pour some of this solution on the fiber brush. Squeegee the solution onto the next OF"-KEROSENE solution and repeat the cleaning

ES, TOO

s and greasy dirt are easily cleaned by spraying ution, followed by an immediate rinsing with clear water

L AND GREASE FROM ANY SURFACE EASILY AND ECONOMICALLY

in drums, half-drums, or quarter-drums equipped with a faucet, and in 5- 1-gallon cans with pouring spouts

THESE CATALOG PAGES AND CIRCULARS NOW READY FREE. SEND COUPON FOR SAMPLE AND PRICES OF "DYGEX".

THE DAVIES-YOUNG SOAP COMPANY
DAYTON • OHIO

THE DAVIES-YOUNG SOAP CO., Dayton, Ohio.

Please send us free sample of "DYGEX" and prices in 55-, 30-, 15-, 10, and 5-gal. drums; and 1-gal. cans.

Name .....

Address .....

City and State .....

University of Florida
LIBRARY

Soap and Sanitary Chemicals

Reg. U. S. Pat. Office

Volume XVI
Number 10

OCTOBER
1940

SANITARY Products Section, which forms a part of every issue of SOAP, begins on page 77.

MEMBER AUDIT BUREAU OF CIRCULATIONS

Contents

- Editorials 23
- Dish Washing 25
- Alkali Silicates 28
  By Dr. Foster D. Snell
- Ceylon Citronella (Part II)..... 32
  By Dr. Ernest Guenther
- Soap Kettle Design 61
- What Composition for Roach Powders?..... 92
- Disinfectants in the Tannery..... 95
  By Paul I. Smith
- Moth Proofing Test 97
- Germicide Testing 99
  By Dr. Samuel S. Epstein
- Evaluating Insecticide Odors 107
  By J. C. Booser
- Contracts Awarded 49
- New Trademarks 51
- Raw Material Markets..... 55
- Raw Material Prices..... 57
- Products and Processes..... 65
- New Patents 67
- New Equipment 71
- Classified Advertising 125
- Advertisers' Index 137

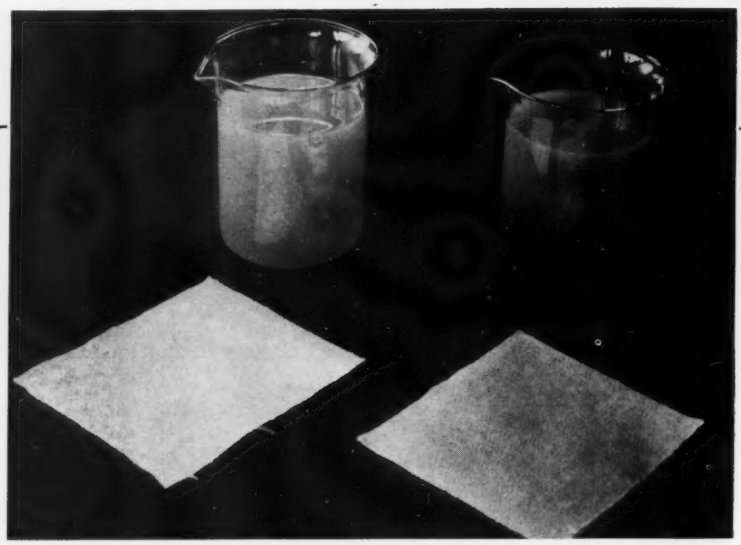
Published by

MAC NAIR-DORLAND COMPANY, INC.
254 WEST 31st STREET NEW YORK, N. Y.

Subscription rate, $3.00 per year. Foreign, including Canadian, $4.00. Copy closing dates—22nd of month preceding month of issue for reading matter and 10th of month preceding month of issue for display advertising. Reentered as second-class matter, Feb. 9, 1938, at Post Office, New York, under act of March 3, 1879. Mail circulation, September, 1940, issue, 3,944 copies. Total distribution, 4,300.

DU PONT Tetra Sodium Pyrophosphate

Prevents Iron Stains



Each solution shown in the photograph contained 100 parts per million of iron added as ferrous sulfate. To each were added sufficient soap and alkali to cause sudsing. The solution on the left contained in addition 0.05% Tetra Sodium Pyrophosphate. A piece of new white cloth was washed in each solution, rinsed and dried. As indicated by the photograph, the cloth washed in the solution containing T. S. P. P. remained white and clean. The other cloth was badly stained by the iron.

The solubilizing action of Tetra Sodium Pyrophosphate on iron salts is shown by the appearance of the solutions also. In the solution containing the Tetra Sodium Pyrophosphate, less cloudiness is evident as the iron has been kept permanently in solution and is not "available" to stain the fabric. The solution on the right without the Tetra Sodium Pyrophosphate is loaded with iron impurity and will stain fabrics which it contacts.

● Iron staining of fabrics due to the presence of iron in the wash water is a serious difficulty often experienced in home and commercial laundering. The stains are persistent and are not readily removed by rinsing or subsequent washing.

Effective prevention of iron staining may be obtained through the use of DU PONT Tetra Sodium Pyrophosphate in the washing compound. This chemical has an unusual capacity to "solubilize" iron, keeping it in solution throughout the washing process. As a result, there are no unsightly yellow stains on the washed fabrics.

Materials yellowed by iron stains from previous washing will be whitened and brightened when washed in detergent solutions containing DU PONT Tetra Sodium Pyrophosphate.

Use DU PONT Tetra Sodium Pyrophosphate for better soaps and cleaning compounds. Technical service is available to assist users of DU PONT "Pyro" in the composition of detergents.

DU PONT

E. I. DU PONT DE NEMOURS & COMPANY
INCORPORATED
GRASSELLI CHEMICALS DEPARTMENT
WILMINGTON, DELAWARE

Atlanta • Birmingham • Boston • Charlotte • Chicago • Cincinnati • Cleveland • Detroit • Los Angeles • Milwaukee
New Haven • New Orleans • New York • Philadelphia • Pittsburgh • Rensselaer • San Francisco • St. Louis • St. Paul
Represented in Canada by CANADIAN INDUSTRIES, LTD., General Chemicals Division, Montreal and Toronto

• SUPER-WAX is a new Premium Quality white self-polishing floor wax made by a new QUICK-CHILL PROCESS . . . perfected by Hysan to meet the modern demand for a floor wax of *balanced performance.*

Due to this newer method of chilling, we achieve smaller microscopic dispersion which substantially enhances the lustre of the No. 1 Yellow Prime Carnauba wax content. This "free" increase in lustre has afforded our chemists a reserve to build up the other properties of SUPER-WAX—properties which by standard processing must be sacrificed if supreme lustre is achieved.

The slip factor has been reduced to an extent that SUPER-WAX is specified for more positive traction on floors that are naturally slippery even in unwaxed condition. This further advantage has been accomplished with complete freedom from stickiness or smear—thus achieving a long sought ideal of wax research.

The extra fine dispersion of the wax also results in smoother spread and leveling qualities. SUPER-WAX lays better. It is proof against the invisible lifting and flaking to which ordinarily processed waxes are subject when mopped or scrubbed.

RETAINS ITS HIGH LUSTRE
—EVEN AFTER MANY WASHINGS

SUPER-WAX won't milk under heavy traffic on damp or rainy days. It will hold optimum lustre after dozens of neutral soap washings. Yet it can be quickly removed by any good wax remover such as our Hysolene.

SUPER-WAX was first supplied as a laboratory product seven months ago to a limited group whose clientele could not obtain from currently supplied waxes the enhanced type of floor finish they required. As production increased, we reduced the price. Today we are quoting SUPER-WAX at the price of ordinary liquid wax.

From consumer reports forwarded to us by our jobbers, it is patent that SUPER-WAX, at its new low price, is the greatest *quality buy* in the floor maintenance field. Write for 5 gal. trial pail at drum price.

FOR SUPREME LUSTRE, NO WAX IN THE WORLD EQUALS GENUINE CARNAUBA

"Carnauba wax has the property to a greater degree than all other waxes of imparting a lustre to the preparations made from it."

• This laboratory finding by J. Lewkowitsch, world renowned authority on oils and waxes, has never been successfully challenged. That is why Hysan uses only 100% Carnauba for the rich wax content of SUPER-WAX.

• As you know, there are many commercial grades of Carnauba—from yellow, to yellow medium, down to gray chalky. The best of these commercial grades do not always run uniform in characteristics. To obviate this, Hysan uses the prime of No. 1 Yellow.

• This is the finest Carnauba wax money can buy.

• As with the wax content, so with every other ingredient used in SUPER-WAX . . . We have employed the choicest materials known to present day research.

• By currently pricing this *premium product* at the level of ordinary liquid waxes, Hysan has added another bright star to a deluxe sanitary supply line studded with year 'round, sales winning, profit-building quality products.

CLEANERS • DISINFECTANTS • SOAPS •
DEODORANTS • DEODORANT BLOCKS •
INSECTICIDES • POLISHES • WAXES

HYSAN SHIPS IT FASTER

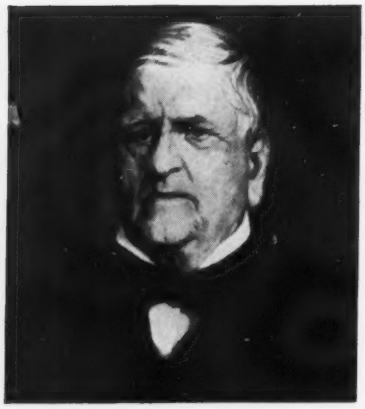
HYSAN
MANUFACTURING CHEMISTS

PROTECT YOUR LABEL WITH HYSAN QUALITY

HYSAN PRODUCTS CO.
2560 Armitage Ave., Chicago
Send 5 gal. pail of Superwax at the drum price.
Firm .....
Street .....
City ..... By .....
S-10-40

HYSAN PRODUCTS CO. 2560 ARMITAGE AVE., CHICAGO

University of ... LIBRARY ... MOSCOW



SALT OF THE EARTH

Fifty years ago a man sat in a Pittsburgh office and pondered a need. He was Captain John B. Ford, father of the plate-glass industry in America. His need was for soda ash. Out of this need, and out of an irresistible urge to take the basic raw materials of the earth and translate them into useful products for the service of mankind, he decided to found a chemical company.

It was a venture into a new field. Captain Ford was eighty years old. In the course of a long life he had applied his creative powers to the manufacture of many needs for a growing country: saddles for the American Army in Mexico, ships for commerce on the Ohio and the Mississippi, iron and steel for a rising industrial nation. . . . He had not only manufactured thousands of tons of plate glass, but he was the first to polish plate glass successfully . . . to make it commercially practicable.

Now he would seek other raw materials: salt, limestone and coal. He would combine them chemically and produce his own soda ash for his glass factories. He would be independent of all sources of supply. . . . Most important of all, he would be turning his restless energy to fresh fields.

Here was a challenge: Captain Ford met it characteristically. He purchased twenty acres of salt beds along the Detroit River in Wyandotte, Michigan, and there began the production of brine. On these twenty acres he built his first small soda-ash plant. . . . He called it the Michigan Alkali Company.

When Captain Ford drilled his first salt well in 1890 he knew that the brine pumps would be working after his time. What he could not know was that fifty years later, in 1940, the wells he drilled would still be producing night and day . . . that instead of 20 acres and 10 wells there would be 300 acres and 50 wells . . . that more than 42 miles of piping would be needed to supply one of his plants alone . . . that more than 40 million gallons of water would be used every day . . . that his Michigan Alkali Company would become one of the great basic chemical companies of the world, manufacturing a wide range of different products, serving more than 50 different industries.

On its fiftieth anniversary, the Michigan Alkali Company can pay no more just tribute to its founder than to say that Captain John B. Ford builded better than he knew . . . that from his day to this, his company has continued in ever-increasing ways to translate raw materials, among them the salt of the earth, into useful products for the service of mankind.

50th ANNIVERSARY 1940

MICHIGAN ALKALI COMPANY

WYANDOTTE, MICHIGAN

SODA ASH • CAUSTIC SODA • BICARBONATE OF SODA • CALCIUM CHLORIDE • DRY ICE • LIQUID CHLORINE
CALCIUM CARBONATE • COKE • CEMENT • TAR • TOLUOL • BENZOL • XYLOL • CALCIUM HYPOCHLORITE

ELIMINATE UNCERTAINTIES OF COST AND SUPPLY!

USE THESE FELTON PRODUCTS TO SOLVE YOUR ESSENTIAL OIL PROBLEMS!

Berganella

(Replaces Oil of Bergamot)

Sassafrin

(Replaces Sassafras artificial)

Lavenola

(Replaces Oil of Lavender)

Javonella

(Replaces Oil of Citronella)

PERFECT PERFUME MATERIALS FOR

- ★ ALL TYPES OF SOAPS
- ★ WASHING POWDERS
- ★ LIQUID CLEANSERS
- ★ POLISHES AND WAXES

FELTON Quality

FELTON CHEMICAL CO., INC.

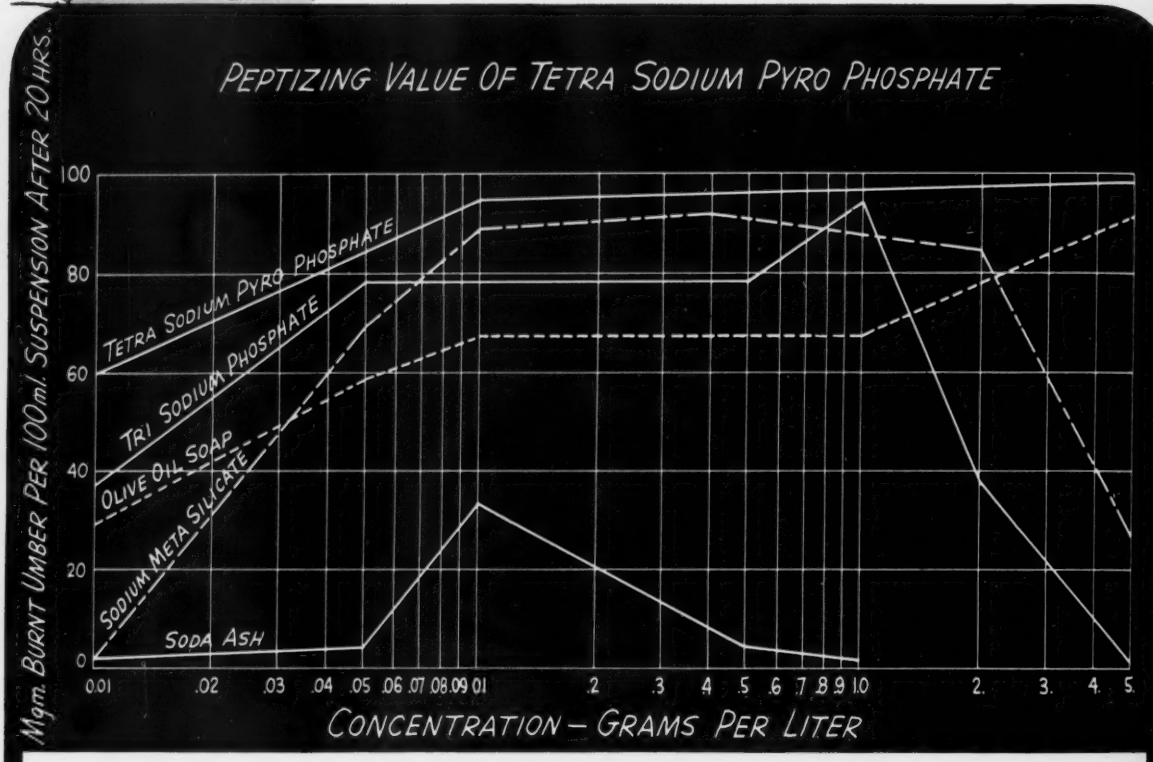
603 Johnson Ave., Brooklyn, N. Y.

Manufacturers of AROMATIC CHEMICALS, NATURAL DERIVATIVES, PERFUME OILS, ARTIFICIAL FLOWER AND FLAVOR OILS. BRANCHES IN PRINCIPAL CITIES.

These four manufactured products possess important advantages over natural essential oils. Among them are dependable low price, uniform quality, ready availability, and a clean lasting fragrance that actually adds sales appeal to your products.

Write **NOW FOR SAMPLES AND QUOTATIONS!**

LET THIS "PEPTIZATION" CHART SHOW YOU WHY MONSANTO TETRA SODIUM PYROPHOSPHATE IS SO EFFICIENT



One of the most important functions of a detergent is to stabilize the suspension of "dirt" particles so that they will not re-deposit on the article which is being cleaned. This ability to keep small particles of solids and oils suspended in a water solution is generally referred to as "peptization," and the complex molecular construction of Monsanto Tetra Sodium Pyrophosphate possesses remarkable peptizing value.

The above chart presents Monsanto Tetra Sodium Pyrophosphate in comparison with soap and several of the more common alkalies.

In addition to its peptizing value, Monsanto Tetra Sodium Pyrophosphate has mild alkalinity, valuable in the washing of wool, acetate and silk; has excellent water softening properties, surpressing the formation of insoluble calcium and magnesium soaps; and is exceedingly stable, not reverting to orthophosphate when boiled in water.

Complete information and samples of Monsanto Tetra Sodium Pyrophosphate will be sent on request. Inquire: MONSANTO CHEMICAL COMPANY, Phosphate Division, St. Louis, U. S. A.

MONSANTO CHEMICALS

SERVING INDUSTRY . . . WHICH SERVES MANKIND

FAMILY RESEMBLANCE • Some authorities hold that all packages in the "line" should have an identifying similarity of design. Others believe that this is not essential, perhaps not even desirable. *Continental*, however, is inclined to say, "It all depends . . . "

But, in any case, the possibilities in "family resemblance" are interesting. And so, with an idea of being helpful in a practical sort of way, *Continental* illustrates here three simple variations of technique in "packaging a line."

Needless to say, when you have a packaging problem . . . whether it be a question of shape, design, color or reproduction—whether it involves one or several products . . . *Continental* welcomes your call for help.

One of a Series Devoted to Packaging Ideas. Copyright 1940 by Continental Can Company, Inc.

CONTINENTAL CAN COMPANY

NEW YORK · CHICAGO · SAN FRANCISCO · MONTREAL · TORONTO · HAVANA

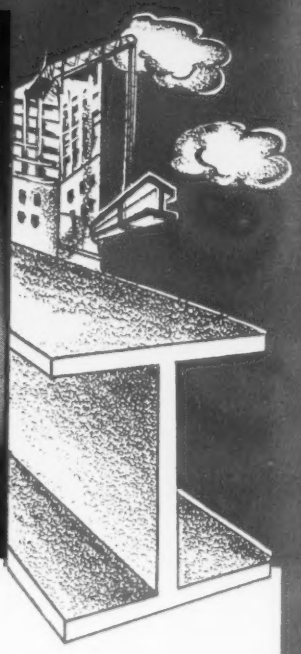
Another FAMOUS CUSTOMER FOR POUR-N-SEAL

FOR its newly designed Shell Tox Cans, Shell Oil Company has selected POUR-N-SEAL, because of their convenience to the consumer and their adaptability to economical production at Shell's own plant.

POUR-N-SEAL is the first really satisfactory cap for sealing and re-sealing oval pouring spouts. It makes a positive seal at all points, even at the pouring point. Easy to remove . . . easy to replace . . . an ideal cap for any product that presents a pouring problem.

POUR-N-SEAL is the companion product of KORK-N-SEAL, the round cap with the handy lever. Complete information, prices and samples are available by writing: **Williams Sealing Corporation, Decatur, Illinois,** *a division of Crown Cork and Seal Company.*

Eye Appeal + ENDURANCE



The

MODERNE

LOCK-TOP

LIQUID SOAP DISPENSER

LIST OF PRODUCTS

- LIQUID SOAP DISPENSERS
- LIQUID SOAPS AND BASES
- OILS, SOAPS AND LIQUIDS
- DISINFECTANTS
- INSECTICIDES
- WAXES AND POLISHES
- DEODORIZING BLOCKS
- CONTAINERS AND ALLIED PRODUCTS

. . . and we nearly forgot to mention Moderne's important purse appeal.

The Moderne is merely one model in the complete precision line.

NOTE: Ask about our new service that will boost your dispenser sales way up.

AMPION CORPORATION

4-88 FORTY SEVENTH AVE.
LONG ISLAND CITY, N. Y.

Are You Interested

IN MANUFACTURING
—A SOAPLESS SHAMPOO
—A LIQUID DENTIFRICE
—A BRUSHLESS SHAVING CREAM

In short, a product where a non-toxic wetting and detergent agent of minimum by-odor or taste should be used?

If so, investigate PRODUCT GL 4C a protein derivative fulfilling all of these requirements.

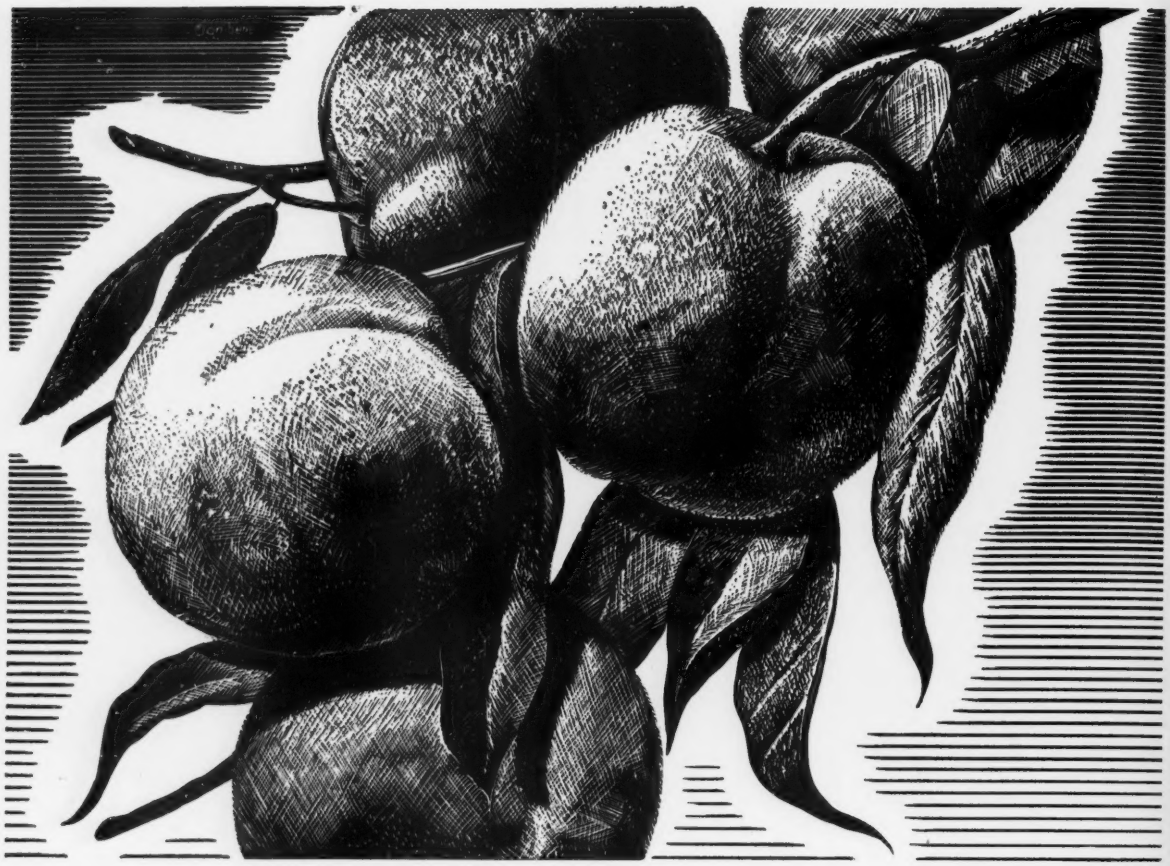
Protect your source of supply by using the above product manufactured in the U. S. A.

Requests for samples on your firm's letterhead will be promptly answered.

AROMATICS DIVISION
GENERAL DRUG COMPANY

170 Varick St., New York
907 Elliott St. W., Windsor, Ont.

9 S. Clinton St., Chicago, Ill.
Transportation Bldg., Los Angeles, Cal.



The Result of Careful Cultivation

Factory products—like Nature's products—are dependent for their quality upon the use of good basic materials and care. Many manufacturers—proud of their products, and intent upon achieving finer results—are turning to Niagara Alkali Company as their source of supply for Caustic Soda, Caustic Potash and Carbonate of Potash—because Niagara products are recognized for their dependable uniformity and consistently high quality. If you are seeking finer results, let Niagara meet your requirements for good basic materials.

Niagara ALKALI COMPANY

60 EAST 42nd STREET, NEW YORK, N. Y.

Affiliated with Electro Bleaching Gas Company, Pioneer Manufacturer of Liquid Chlorine

PARA
CAUSTIC SODA
CARBONATE OF POTASH
CAUSTIC POTASH

IONONES

GERANIOLS

METHYL IONONES

PHENYL ETHYL ALCOHOL

VAN AMERINGEN-HAEBLER, INC.

315 FOURTH AVENUE, NEW YORK CITY

ARE MAJOR PRODUCERS OF THESE AROMATIC CHEMICALS

FOR THE **SOAP** INDUSTRY.

WE WILL BE PLEASED TO SUBMIT SAMPLES AT YOUR REQUEST.

DU PONT

REG. U.S. PAT. OFF.

Aromatics

E. I. du Pont de Nemours & Co. (Inc.)
Fine Chemicals Division, Wilmington, Delaware

Du Pont Isobornyl Acetate

is the economical odor base for a wide range of products

YOU can use this popular odor of freshly crushed Siberian pine needles to excellent advantage in soaps of all kinds, deodorants, para blocks, bath crystals and many other sanitary products. Du Pont Isobornyl Acetate in many cases supplements and replaces natural oils which are becoming increasingly difficult to obtain.

It is made from domestic raw materials, so you are assured of dependable quantity and controlled quality. It is water-white, resistant to alkali and non-discoloring. It'll pay you to investigate Du Pont Isobornyl Acetate.

We'll be glad to send you samples and complete information concerning Du Pont's aromatic chemicals. Write: Du Pont Aromatic Section, 40 Worth St., New York City.

ANOTHER DU PONT SYNTHETIC AROMATIC

HERE'S HOW to Make Hospital Surgical Soap Business "ALL YOURS"!

Surgeons like this soap.
They like this dispenser—
Hospitals enjoy ECONOMY

"BUCKEYE" Surgical LIQUID SOAP

IT WILL PAY YOU to look into this—

First, satisfy yourself that "BUCKEYE" Surgical Liquid Soap lathers freely and cleanses thoroughly, *without producing the irritation* or roughness due to harsh soaps. It is a mild, neutral soap, produced scientifically from pure vegetable oils.

It "goes far" in dispenser use: one part "BUCKEYE" Liquid to three parts of distilled water means greater economy.

DISPENSER *GIVEN* FREE

You can actually OWN this practical, approved Dispenser without charge—not merely have the use of it on loan.

Your supply house can give you details. We will be pleased to send you a generous free trial sample of this soap if desired.

Cash in on this Sensational, PROVEN PLAN to WIN and HOLD Customers for "BUCKEYE" Surgical LIQUID SOAP

This Remarkable FREE OFFER Now Being Announced to the Nation's Hospitals . . . Be Prepared to Meet the Demand, and PROFIT!

Dealers in "BUCKEYE" Surgical Liquid Soap now have EVERY advantage in selling the Hospital business! In addition to the recognized superior quality of this Soap itself . . . its economy for the user . . . and its attractive price—you now have the backing of National Advertising to Hospital Buyers . . . featuring a real Merchandising Plan that CLICKS!

Think of being able to GIVE Hospitals a modern, highly practical Dispenser—selling to users for $25.00—at no cost to the Hospital or to yourself! That's exactly what you CAN do. You can supply the Dispenser immediately with initial order and guarantee that it will become the hospital's OWN PROPERTY as soon as YOU have delivered a specified minimum quantity of "BUCKEYE" Surgical Liquid Soap.

THIS MEANS "PERMANENT" CUSTOMERS

This exceptional offer is possible because users who get acquainted with "BUCKEYE" Surgical Liquid REMAIN users! "BUCKEYE" S. L. Soap is a combination of vegetable oils— a neutral soap which will not irritate the tenderest skin even with the repeated washings and scrubbings required every day of doctors, nurses and dentists. It contains full 40% anhydrous soap value. Its thick, creamy, abundant lather cleans thoroughly, quickly and gently. Used in the proportion of one to three parts of distilled water—its economy is another outstanding feature.

Be sure to get full information about how you can sell more hospital business with "BUCKEYE."

As Advertised in MODERN HOSPITAL

THE DAVIES-YOUNG SOAP CO., DAYTON, OHIO

Please send full details of your FREE DISPENSER Merchandising Plan on "BUCKEYE" Surgical Liquid Soap.

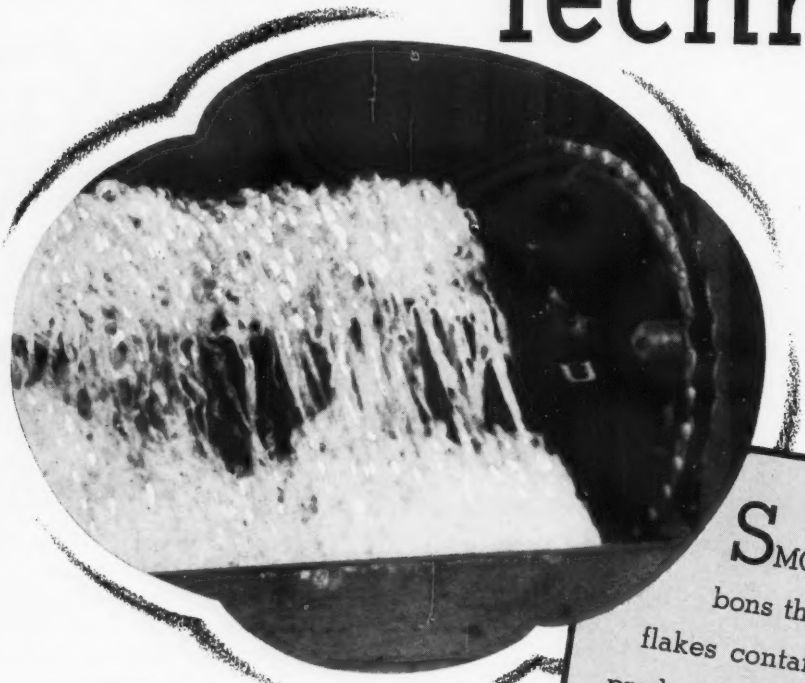
Name .....

Address .....

City and State .....

University of Idaho
LIBRARY
MOSCOW

Improve Flaking Technique



No. 3 of a series

SMOOTH-FLOWING ribbons that cut into pure soap flakes containing less fines and producing better bulk!

That's what you get when small amounts of Standard Silicate are added in the making.

Texture and flaking qualities are improved, there is less susceptibility to rancidity and your product looks better, too!

Standard SILICATE

DIAMOND ALKALI COMPANY • Standard Silicate Division

Plants at CINCINNATI · JERSEY CITY
LOCKPORT, N.Y. MARSEILLES, ILL.

General Offices • PITTSBURGH, PA.

S-5

Imponderables

and

DIMES

WHIRLING dervishes have nothing on a quiet piece of soap. There are terrifying subatomic movements locked up in soap, which if released, would form a vital mass of energy.

By a consensus of six methods it is calculated that there are several quintillion* molecules in a cubic inch of gas, many more in an inch of soap, and yet there is so much room left that an X-ray can go through this mass like a pin through cheese cloth.

There is plenty of mystery and romance still locked within a soap bubble.

**For those to whom a quintillion is an unfamiliar number we append an example. If every dollar of our national debt were converted into dimes and this colossal sum were multiplied by two million we would barely have a quintillion dimes.*

CONSULT CLIFTON

on

POTASH SOAPS

Vegetable Oil Soaps — **Green Soaps**

Liquid Hand Soaps — **Liquid Floor Cleansers**

as well as allied products such as

Coal Tar Disinfectants — **Cresol Solutions**

Pine Disinfectants — **Rubless Waxes**

Furniture Polishes — **Perfumed Deodorizing Sprays.**

Liquid Soap Dispensers

CLIFTON CHEMICAL CO., INC.

248 FRONT STREET — **NEW YORK CITY**

TECHNICAL NAME: Sodium Pyrophosphate, Anhydrous

FORMULA: $Na_4P_2O_7$

PHYSICAL PROPERTIES: A white powder, soluble to the extent of 7 parts in 100 parts of water at 80° F., and 40 parts in 100 parts of water at 212° F. It is mildly alkaline, a 1% solution having a pH of approximately 10.1.

GRADES OR STRENGTHS: Standard powder, 100% thru 20 mesh, 90% minimum thru 100 mesh. The minimum P_2O_5 content is 52.5%.

PACKING: Barrels, paper lined, net wt.—375 lbs.
Multiwall paper bags, net wt.—100 lbs.

SHIPPING REGULATIONS: None.

PRINCIPAL USES: In the manufacture of soap and soap powders, household, metal and other cleaning compounds; as a detergent in the textile industry; as a dispersing agent in the manufacture of pigments, paints and ceramics.

● Tetrasodium Pyrophosphate embodies several important characteristics that place it in an almost unique category among products used for manufacturing soaps and cleansers. The more important of these are its water-softening properties, the ability to deflocculate and emulsify, and the highly unusual property of dissolving and retaining in solution many compounds that are often precipitated from soaps and alkalies in normal wash solutions.

Tetrasodium Pyrophosphate is not a new product, nor is the use of alkali pyrophosphates in the manufacture of soaps and lyes a new development. However, in recent years there has arisen a definite new interest in the characteristics of the alkali pyrophosphate group. Activity in this connection dates back to the work of J. H. Gladstone who reported in 1867 that many insoluble phosphates of metals such as copper, iron, manganese, aluminum, etc. could be converted to soluble double salts by treating them with an excess solution of Tetrasodium Pyrophosphate. The use of alkali pyrophosphates in the manufacture of soaps and lyes was noted by G. H. Bernard in 1907.

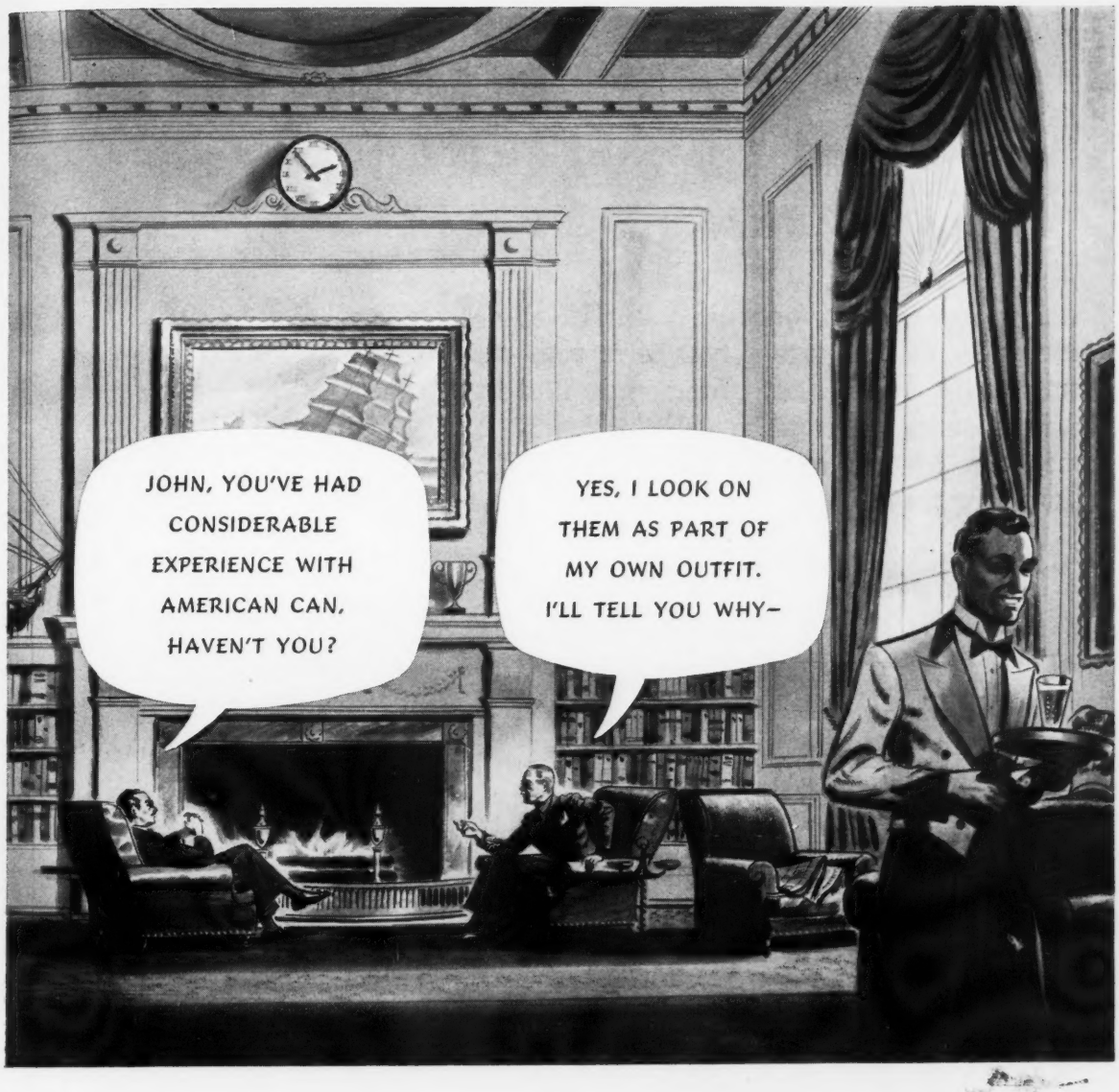
As a soap builder in the manufacture of soaps, soap powders, household cleansers and other cleaning compounds, the combined chemical characteristics of Tetrasodium Pyrophosphate have proven extremely valuable. The relatively low pH, which is almost equivalent to neutral soap, makes it particularly adaptable for use in fine soaps and detergent compounds where the use of stronger alkalies is not practical.

Tetrasodium Pyrophosphate is also being widely used in many industrial operations. In the textile industry it is employed as a stabilizer with sodium and other peroxides in certain bleaching processes, in the "degumming" of cotton and silk, and in the cleaning of rayon and wool. The deflocculating and dispersing properties of Tetrasodium Pyrophosphate are being successfully utilized in the manufacture of paints, pigments and ceramics to cause complete dispersion of the pigment or to produce a more uniform slurry in the grinding.

General Chemical Company first manufactured Tetrasodium Pyrophosphate in 1915. Since that time, General Chemical research has been responsible for many improvements in the manufacture of this chemical. These improvements have resulted in the more economical production of a uniform, high-grade product which is now being put to wide use by many industries.

Reproduction of insert for the General Chemical Company Products Book. For extra copies of this page, or additional information, write to

GENERAL CHEMICAL COMPANY, 40 RECTOR STREET, NEW YORK, N. Y.


JOHN, YOU'VE HAD CONSIDERABLE EXPERIENCE WITH AMERICAN CAN, HAVEN'T YOU?
YES, I LOOK ON THEM AS PART OF MY OWN OUTFIT. I'LL TELL YOU WHY–

"When I have a problem—whether it's manufacturing or marketing—they make it their problem. Their resources are mine, until I've licked the thing. And many's the time they've come through with new developments and ideas which have helped keep me out in front. You ought to find out what American Can can do for you!"

CANCO AMERICAN CAN COMPANY, 230 PARK AVENUE, NEW YORK, N. Y.

"....quiet please!"

STOP THAT *BANG, BANG, BANG* OF WORN-OUT SOAP PRESSES...

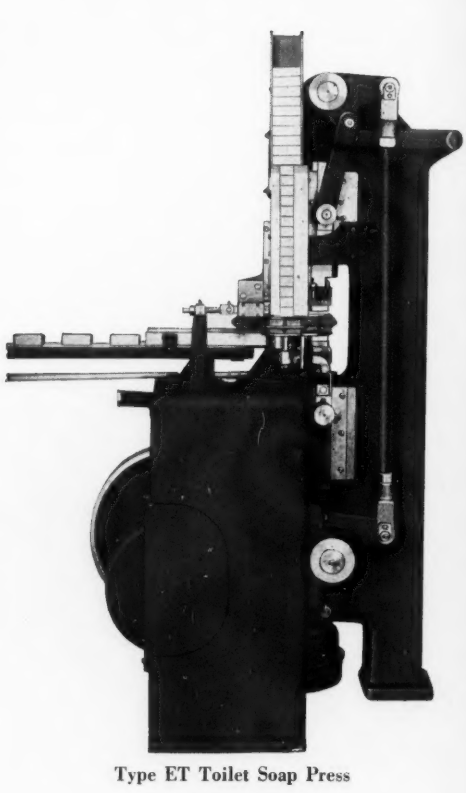
...before your factory walls are shaken loose from their moorings and your nerves drive you,—and your men,—haywire. Soap pressing now need not be a crash-bang affair. Noise and vibration will be conspicuous by their complete absence, when your plant is equipped with

JONES

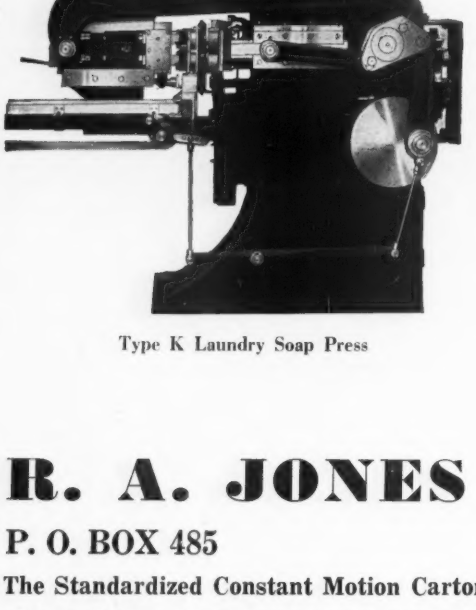
Toggle Operated

PRESSES

To put up with the noise, vibration, damaged dies, poor pressing, retarded production of worn soap presses is on a par with driving a rattling twenty-year-old automobile, with its poor and costly transportation.



Type ET Toilet Soap Press



Type K Laundry Soap Press

With new JONES Toggle Operated Presses, perfect pressing at lower cost is yours, plus greater output, no marred cakes, silence and contented operators.

Old presses are an expensive economy—why not replace them NOW with new JONES Toggle Presses.

R. A. JONES & COMPANY, Inc.

P. O. BOX 485 **CINCINNATI, OHIO**

The Standardized Constant Motion Cartoner packages, bottles, jars, tins, collapsible tubes and many other articles. It feeds, folds and inserts direction sheets and corrugated board liners with the loads.

As the Editor sees it..

IN the present market, inventories of oils and fats purchased several months ago and now on hand at soap plants, constitute a headache. Soap is being manufactured in most cases today from oils which were purchased very considerably above the levels at which they could now be replaced. But inasmuch as soap is seldom manufactured tomorrow from oil purchased today, and raw material requirements must be figured well ahead, this is not an uncommon happening. Most soapers have been through the same experience many times before.

No doubt exists but that all soapers would have been tickled to death to have had empty storage tanks, and consequently no inventory of fats, a month or so ago when prices dipped to their low levels. At the same time, we feel that it is not too strong to say that nobody but a fool would permit himself to be too short of basic raw materials under present world economic conditions,—that is if he were truly a manufacturer and not just a gambler dressed in manufacturer's clothing. In our opinion, inventory losses have been suffered by those whose buying policies are soundest, and represent only a fraction of possible losses were the situation sharply reversed, as well it might be in a war-torn economy.

CASH discounts have recently been reduced by some firms among the soap and sanitary chemical manufacturers, and we hear reports of resounding squawks from certain buyers, particularly among the jobbers and distributors. Maybe they fear that this time-honored custom is getting closer to the day when its head will fall beneath the ax of progress, and they do not like to see it go. After all, it has been a nice little graft these many years.

No excuse has existed for a cash discount in business since the days of the Civil War, from the frenzied and money-starved finances of which sprang the habit in its present form. It was an inducement, a bribe if you will, to debtors to pay their bills in times when money was as scarce as grass at Times Square. And it has carried on down through the years without rhyme or reason. In the present state of our money markets, there is less excuse for it than ever before. It has always been and still is one of the most widely abused financial customs, just another door left ajar where the chiseler will take advantage, but the honest man will not.

We salute these cuts in cash discounts as a step toward that time when the trade will go whole-hog and eliminate them completely. In all the years, we have never heard a good sound argument in favor of the cash discount, but we have heard a dozen strong ones against it.

DISHES, glasses, and utensils in restaurants, hotels, taprooms, soda fountains, and other public eating and drinking places are not being washed clean. According to a recent survey by the New York State Agricultural Experiment Station, Geneva, N. Y., only 7 per cent of glasses and utensils in hotels and restaurants appeared to be properly washed and

cleaned. For soda fountains, the figure was higher, averaging 20 per cent. In other words, at least four out of five glasses, spoons, forks, etc. being used in public places are dirty.

Such a condition is not one which should be tolerated in this day and age. That it represents a menace to public health and is a factor in the spread of disease is quite likely. Many public health officials are cognizant of the situation and have been studying the problem for several years. These studies are going on anew at the present time, and out of them are likely to come stricter state and local regulations on dish washing and also a set-up of standards for soaps, detergents, germicides, and the like used in these operations.

During the next year, we would not be at all surprised to see a strong drive get under way to clean up this situation. It is certainly crying for attention right now. Because it presents a difficult problem in enforcement should not stand in the way. That it will have the full support of all manufacturers and distributors of the essential detergents and other materials for dishwashing, goes without saying. Such a campaign cannot start too soon!

ONE of the reasons why Americans should appreciate living in the United States is that they can buy soap,—meaning, of course, that it is plentiful, cheap, and not rationed as it is in some of the countries of Europe, particularly Germany. This was one of the points made by an American school girl who returned last year from Germany, and who wrote an essay and won a prize of a thousand dollars offered by the "American Magazine." Her terse expression, "We can buy soap," epitomized her views on one phase of living conditions in this country as compared to those of Germany even before the war started a year ago.

How incongruous it seems that Germany from whence have sprung during the past half-century so many scientific advances in fat chemistry, in synthetic detergents, and in soap manufacture, should be short of soap. And yet it is a fact,—additional evidence of economic maladjustment which we fear cannot be corrected with any degree of permanence by guns and bombs.

IF a manufacturer of insecticides, polishes, disinfectants, cleaners, soaps, or anything else makes special size packages for the ten-cent stores, drug and grocery chains, and the like, he may no longer restrict the sale of these special sizes to the chains. If independent retailers, drug, grocery or what-not, demand to buy and stock these special sizes, the manufacturer is compelled to sell them. Where, for example, the smallest unit available to an independent retailer has been a nineteen-cent size, and the chains have been handling a special ten-cent size available only to them, the latter small special size cannot be restricted, but must be sold to any dealer who wishes to buy it. This was the essence of the Federal Trade Commission ruling in the Luxor case.

Obviously, such a decision may be embarrassing to manufacturers for several reasons. Plans to circumvent the ruling are reported forming, particularly the arrangement of the special sizes in such sales units as to make them unattractive to the small independent retailer. This latter may take the form of larger case units, running from a half-gross to a gross, or even larger in the instance of some items. Whether any such procedure might be effective in the practical restriction of these sizes to the ten-cent stores and other large buyers remains to be seen. It is difficult to see what is to prevent local jobbers from splitting cases for small retailers. But the fact remains that special sizes for special buyers are no longer special.

DISH WASHING—
. . . a health menace?

FOR years, dishwashing has been viewed as a necessary evil in the business of conducting a restaurant, lunchroom, soda fountain, bar, or other public place where food and drink are served. That dishes, glasses, and silverware are not washed properly in four cases out of five is more or less to be expected when the background of dishwashing is considered. The dishwasher is ordinarily the most poorly paid and untrained of all restaurant employees, and his indifference and slipshod handling of his job is understandable. Often he does not realize the importance of proper cleansing of table ware, or he may be woefully ignorant of efficient methods. There are also the factors of plain laziness or stupidity. When even the chinaware used on the tables of our best hotels often shows a germ count above the allowable maximum specified in the various codes, what can we expect from the little restaurant around the corner,—the "hash house" or one-arm cafeteria?

Tests in recent years by various independent bodies indicate that the latter type of eating place or bar is the chief offender. Where hand washing and hand toweling are employed, smudgy dishes and high germ counts may normally be expected. Even where mechanical washing is in use, the results may not be much better. The single tank machine of the push and pull type, where trays of dishes may be shoved in one side and out the other, often without adequate time for washing or rinsing, has been proven to give poor results to judge by germ counts made on dishes stacked in the "washed" pile.

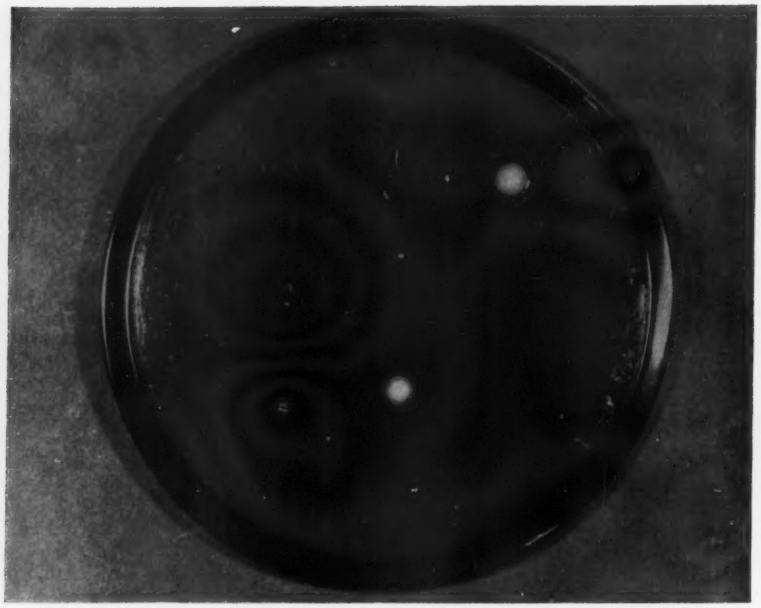
The wrong detergent or inadequate supplies of water of the proper temperature may also negative the results of the best equipment. Of what use putting dishes thru the washer, if one accumulation of food is taken off and a uniform deposit of insoluble salts and pulverized food particles from previous washings is substituted? Of what use rinsing if the rinse water is not hot enough or the rinse long enough to be of any real use? Hot water, after all represents money to any restaurant operator, and it is a rare situation where *enough* water of a *high enough temperature*, from the *beginning* of the wash to the *end*, is available. In a recent survey by a disinterested body, it was found quite normal for water temperature to drop twenty to thirty degrees from the start of the washing operation to the finish. In fully twenty per cent of the restaurants surveyed the temperature of wash water was found to be below 100°F., instead of the 140° to 150° range which should prevail. In isolated cases some individuals were found trying to wash dishes at temperatures as low as 50°F.,—in wash water so cold that the detergent would not even go into solution.

It is impossible to say with any degree of accuracy how many common colds, how many cases of trench mouth, pneumonia, influenza, other contagious diseases and infections have been a direct result of faulty dishwashing in public eating establishments. But it is, however, a fact almost too well known to be here repeated that certain infections and diseases can be transmitted by means of a most innocent-appearing but sometimes lethal eating utensil. Even if the common cold were the only disease which could be transmitted in this way, it would still be of the utmost importance to eliminate at least this one recognized method by which the common cold is spread.

But how much more important does this question become when it is considered that nearly one hundred other contagious diseases may be picked up from the germ-laden rim of a glass or cup which has been washed in the customary casual manner! Statistics show that from 25 per cent to 45 per cent of deaths in the United States are caused by saliva-borne infections which, of course, may be transferred in many ways,—but one of these ways is the common eating utensil. While it would be going too far to state positively that such and such a percentage of infections can be traced to public eating places, still it would be interesting and gratifying to observe the change in mortality statistics if glasses, cups and utensils in all restaurants, taprooms, and soda fountains were actually disinfected or sterilized as they should be.

That such conditions of sanitation are tolerated today is certainly out of tune with the times. So few managers of eating and drinking places realize the importance of proper dishwashing and give so little attention to it that it is no wonder that only a small percentage of supposedly clean utensils are able to pass tests for cleanliness when such tests are made. Dishwashing in restaurants, whether it is done by hand or mechanically will never be effective until managers are made to realize its significance from the standpoint of good business as well as a matter of public health.

The personnel taking care of



Contact plate from mechanically washed dish rinsed at 170°F. and drained dry. Very few bacterial colonies noted.

the dishwashing in eating places is, generally speaking, of a type which needs supervision before dishwashing will be carried out effectively. This, of course, applies even more emphatically to the disinfecting operation. The most poorly paid of all restaurant employees and indifferent to the quality of their work, dishwashers are usually left in complete charge of this operation so important to public welfare.

JUST where has the supplier of dishwashing detergents fallen down in his job and contributed to this bad situation. He does not, we admit, wash any dishes, enforce any laws, now does he operate a restaurant. There should be a definite responsibility on his part, however, it might be pointed out, to educate his customers on the importance of efficient dishwashing, to see that they use the proper detergents and equipment, and to guarantee that ignorance on their part can be no excuse for improper procedure. Booklets on proper dishwashing methods, materials and equipment should definitely be part of the sales literature of every firm selling to this field.

Efforts might also be directed toward stimulating agencies in charge of the enforcement of local sanitary codes to check up on modern and efficient testing methods for germ life on table ware, and to assure that local ordinances are not nullified by failure to enforce them in practice. Along this line it can be reported that several manufacturers of washing machines and detergents are doing more than their part right at the moment by sponsoring and sharing the cost of a dishwashing survey at the New York State Agricultural Experiment Station. A full appraisal of the present dishwashing picture, and a set of simple and proven tests which can readily be carried out in field work may be expected as the result of their work.

To the casual observer, the problems involved in dishwashing may seem trivial indeed. However, in those places where cleanliness is highly essential for hygienic and aesthetic reasons, the issues involved become ones of major importance. From the time that a soiled dish is removed from a dining room table by a waiter or bus-boy until that same dish has been "cleaned" and is ready to be used again, it is exposed to a number of operations and, as the old proverb goes, "there's many a slip 'twixt the cup and the lip." In order to demonstrate where these slips may occur, let us take an imaginary trip through the dishwashing department of one of the higher type restaurants where a dishwashing machine is in use. (Unfortunately hand washing is still by far the most common practice in "beaneries" of the smaller class. Ed. Note.)

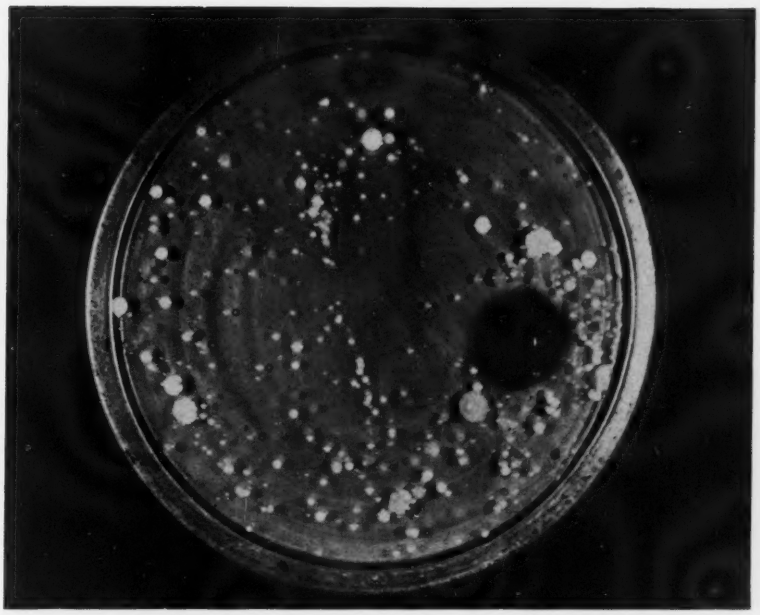
Starting our tour of inspection, we go "back-stage." It is just at meal time, one of the three peak periods of the day for the dishwasher. Clean dishes are needed and needed in a hurry, so dishes must be washed as rapidly as possible. First of all, the soiled dishes are scraped. Then as many dishes and cups as can possibly be crowded in are piled into the dishwashing rack and the rack is placed in the machine. At this point, we test the wash water. It is very hot (165 deg. F.) and strongly alkaline. After a number of racks have passed through the machine, we test the water again and this time we find the conditions have changed strikingly. The water temperature has droped to less than 120 deg., the wash-water seems greasy and is no longer on the alkaline side. The next step in dishwashing is the rinse. The rack full of dishes is transferred to the hot rinsing bath, but not for long since the demand for more dishes is urgent and racks are being rushed through the machine. Dishes are then hurriedly dried with a hand towel, stacked and are ready to be used again.

All this has been executed with speed and apparent efficiency,—but what is wrong with this picture? What is wrong with this process which is repeated three times a day in thousands of public eating places in all parts of the United States? The answer is simple; the dishes are not cleaned. It is true that these operations remove practically all obvious traces of the residue of the last meal, but judged by a more exacting standard, that of public health, eating utensils washed by such indifferent methods may be correctly termed a menace.

The first mistake that was

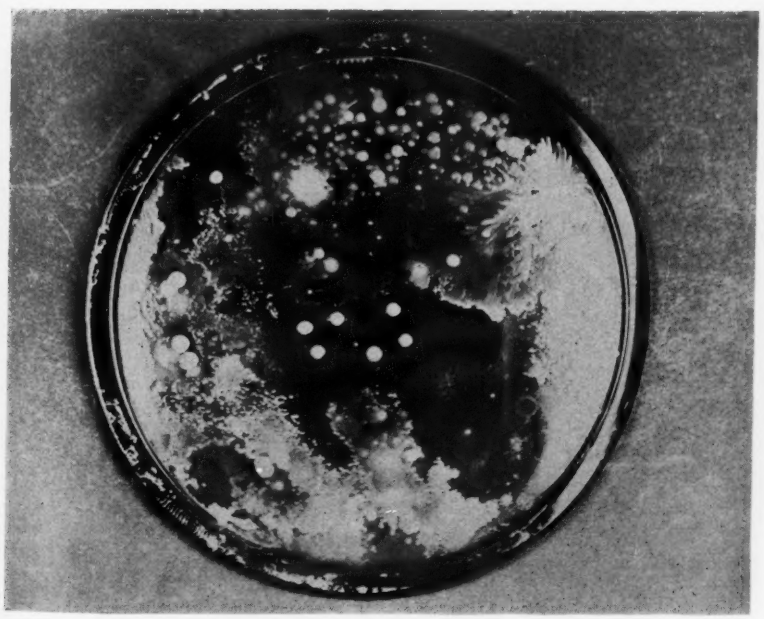
made by the dishwasher in the typical restaurant mentioned above was the manner in which the rack was over-crowded. Even when time is at a premium, it is inefficient for cleanliness' sake to crowd dishes into the rack or to pile dishes or saucers above those in racks, because washing action is impossible if the wash water does not reach the dishes at the center of the rack. For the same reason, small dishes or saucers should not be placed in the same rack with larger plates, for the small dishes are thus hidden from the direct spray action and do not get washed properly. Moreover, the placing of the dishes or glasses in the racks is a matter apparently ignored by most dishwashers. Only one article should be placed in each compartment of the rack and cups and glasses should always be washed upside down for, if they are placed right side up, they fill with water and are not cleaned effectively. Of course glasses should never be washed in the same trays with other tableware for when this is tried, they usually pick up a film of grease which requires a longer time to remove. All glassware should be washed separately.

The quantity of detergent used in machine washing is an all-important consideration if proper cleansing is to be attained. A common tendency among machine operators is to use more cleaning compound than is necessary with the consequent waste of as much as half the compound. Using too much detergent eventually leads to clogging of the machine and loss of time, defeating the original reason for adding excessive amounts as a time-saver. In many cases, as in the one mentioned above, it has been observed that the alkalinity of the wash-water varies considerably from time to time, being too high just after cleaning compound is added and too low at other times. Frequently it has been found that the wash-water shows an acid reaction after several trays of greasy dishes have been put through the machine. Conditions like these, naturally, are responsible for the greasy film on dishes, glasses and silverware found in so many restaurants. There is no excuse for the presence of films on tableware for films provide a fine breeding-place for bacteria. Several devices on the market today have been designed to do away with inefficient and dangerous fluctuations in the detergent concentration of the wash-water and control the water at an approximately constant pH value. Some of these control devices have been employed with a high degree of success.



Contact plate from a mechanically washed dish on which low temperature water and very short rinse were used. Many bacterial colonies noted.

Contact plate from hand-washed and toweled dish.



IN certain vicinities, the hardness of the water imposes other difficulties for the dishwasher by causing the formation of an insoluble film on tableware. Unless special water-softening agents are added to the cleaning compound,

(*Turn to Page* 121)

Alkali Silicates

Manufacture, properties and uses of silicates of 1:1 ratio and higher

By Dr. Foster D. Snell

COMMERCIAL manufacture of alkaline silicates is of relatively recent origin. While sodium metasilicate had been in use in proprietary mixtures prior to that time it became available in 1930 as a basic commodity. Sodium sesquisilicate similarly became available in 1934 and sodium orthosilicate in 1935. All had long been known and their commercial offering may be taken as meeting a requirement of industry rather than an attempt to create one. They fill a previously existing gap between the buffered alkalinity of trisodium phosphate and the alkalinity of caustic soda and are of steadily increasing importance.

Production by Fusion

Alkaline silicates result from fusion of silica with alkaline carbonates or hydroxides. The ratio obtained depends on the ratio in the melt and on whether the carbonate or the hydroxide is used. Fusion with the carbonate in adequate amount gives potassium metasilicate [41, 56], sodium orthosilicate [29] or lithium orthosilicate [33]. Factors influencing the nature of the end product are time, temperature and carbon dioxide pressure [39]. That both the orthosilicate and metasilicate are definite compounds is well established [7, 23, 44]. Crystallization from a melt of sodium metasilicate made in platinum at 1150° as orthorhombic crystals[34, 42] occurs on slow cooling but quenching gives a glass. Large batches may be expected to crystallize[50], either at once or on aging.

Fusion with the hydroxides gives sodium orthosilicate[16, 27, 31] but only potassium metasilicate[8]. The intermediate compound, sodium sesquisilicate or sodium pyrosilicate, $Na_6Si_2O_7$, can be produced by hydroxide fusion as would be predicted[11, 53].

There is neither theoretical nor experimental evidence that any compound more alkaline than the orthosilicate is to be expected, even if fused in a stream of inert gas[10]. As is so frequently the case in development of inorganic systems, numerous compounds have been reported and later found to be based on inadequate evidence.

Morey and Bowen[35] have studied the anhydrous system sodium metasilicate-silica, and Kracek[29] has extended this to sodium orthosilicate. Sodium orthosilicate crystallizes from some of the silica-sodium carbonate melts made at 1000-1100°. At higher temperatures dissociation to give sodium oxide probably occurs and this absorbs oxygen and attacks the platinum crucible. Difficulty in removal of carbon dioxide prevented extension of the investigation beyond the orthosilicate range. In the anhydrous system, there is a metasilicate-orthosilicate eutectic but no sesquisilicate was found. Anhydrous sodium metasilicate fuses at 1089 ± 0.5° but sodium orthosilicate decomposes at 1118° which renders its melting point indeterminable.

For convenience of reference, the metasilicate-orthosilicate system from Kracek's data is shown in Figure I as either the system Na_2O-SiO_2 or Na_2O-Na_2SiO_3.

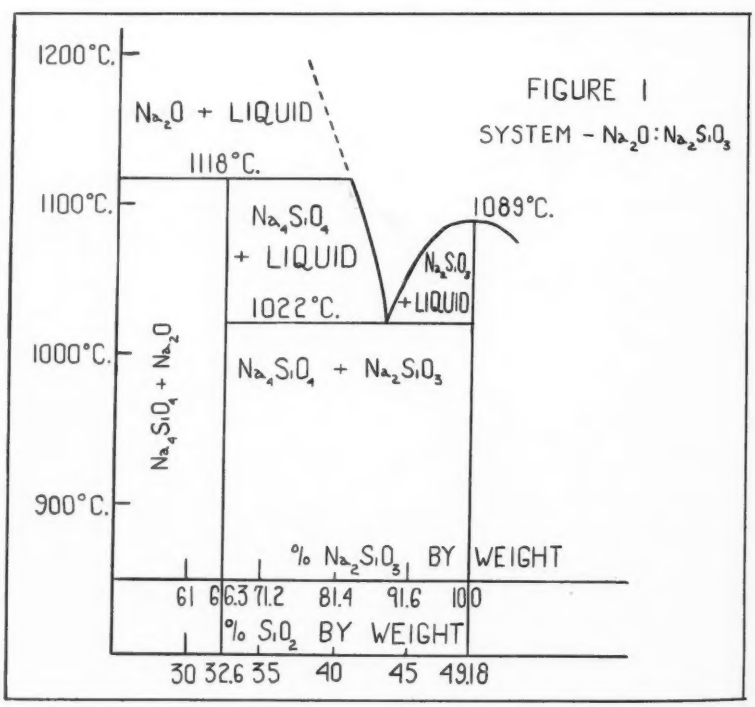


FIGURE I
SYSTEM - Na_2O : Na_2SiO_3

Production from Solution

A solution of sodium metasilicate of the theoretical composition deposits crystalline hydrates when concentrated to 50 per cent[15]. Solutions less alkaline than the metasilicate will not crystallize, although they can be spray congealed. When crystallization occurs from a solution more alkaline than the metasilicate, the crystals are of metasilicate[13, 24] but with each addition of alkali resulting in a lower hydrate. Thus a solution containing 10.5 grams of Na_2SiO_3, 54.5 grams of water and 40 grams of sodium hydroxide deposits the 9-H_2O compound, but increase of the sodium hydroxide to 60 grams results in the 6-H_2O compound. The orthosilicate cannot be crystallized from solution[25, 26]. Substantiated[5, 6] hydrated metasilicates are $Na_2SiO_3.5H_2O$[3]; $Na_2SiO_3.6H_2O$[14, 15, 21, 28]; $Na_2SiO_3.8H_2O$[6] and $Na_2SiO_3.9H_2O$[14, 15, 21, 28, 55]. The melting points are 72.2°, 62.85°, 48.35° and 47.85° respectively. On long heating at 100° sodium metasilicate is dehydrated to about 1.5 molecules of combined water[28].

Basically methods of production of the hydrates are by crystallization or solidification of the theoretical composition with the proper moisture content[1, 25, 54, 55]. This may be produced by addition of alkali to the more siliceous silicates. In solidifying the composition it is preferable to hold at a temperature just under the melting point of the desired hydrate[3]. Trade products whether crystallized or congealed approximate the 5-hydrate.

Sodium sesquisilicate crystallizes from a solution containing 19 per cent of Na_2SiO_3, 33 per cent of sodium hydroxide and the balance water[36]. The crystallized product may be expressed as $Na_6Si_2O_7.11H_2O$; $Na_2SiO_3.Na_4SiO_4.11H_2O$ or Na_3HSiO_4, $5H_2O$. On heating it is altered to other compounds before reaching its metastable melting point which is around 80-90°. The melting point of the dehydrated material is about 1122°[4].

TABLE 1

Compositions of Higher Silicates and Known Hydrates, with NaOH and Na_2CO_3 for Comparison

	Na_2O	SiO_2	H_2O
NaOH	77.5	...	22.5
Na_4SiO_4	67.4	32.6	...
$Na_6Si_2O_7$	60.8	39.2	...
$Na_6Si_2O_7.11H_2O$ ($Na_3HSiO_4.5H_2O$)	36.9	23.8	39.3
Na_2SiO_3	50.8	49.2	...
$Na_2SiO_3.5H_2O$	29.3	28.5	42.2
$Na_2SiO_3.6H_2O$	26.9	26.1	47.0
$Na_2SiO_3.8H_2O$	23.3	22.5	54.2
$Na_2SiO_3.9H_2O$	21.9	21.1	57.0
Na_2CO_3	58.5	...	...

Commercial sodium orthosilicate may be either the solidified anhydrous material or a congealed hydrated product. Saponification of tetraethyl silicate with sodium hydroxide in alcohol in an effort to produce a pure sodium orthosilicate gives sodium metasilicate.

For convenient reference Table 1 shows the composition of the various hydrates of the silicates expressed in terms of Na_2O,SiO_2 and H_2O with equivalent figures for soda ash and caustic soda.

Such hydrates must be kept in tight containers as even sodium metasilicate gains or loses moisture at atmospheric pressure[51] and absorbs carbon dioxide. An attempt has been made to reduce caking by superficially coating with soap[38, 49], but is not believed to be now in use commercially.

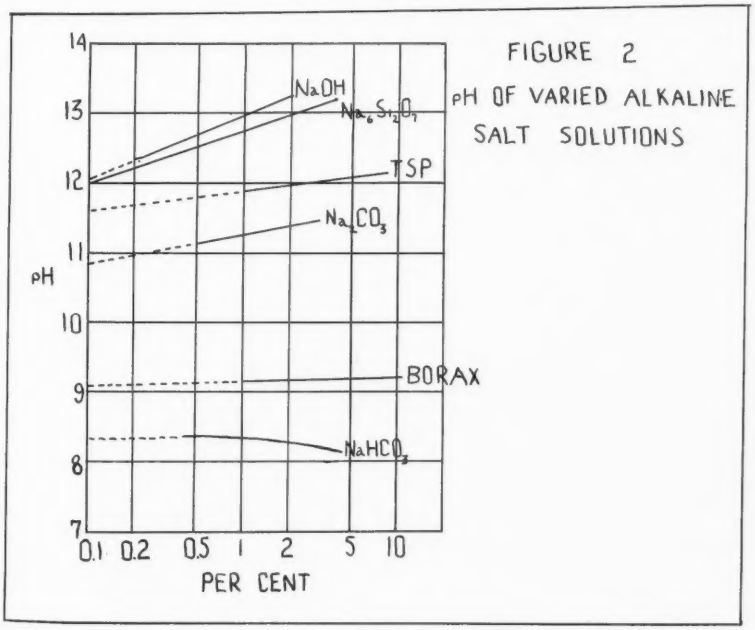


FIGURE 2
pH OF VARIED ALKALINE SALT SOLUTIONS

Orthosilicate in Solution

It has been reported that in strong aqueous solutions metasilicate ions are present but orthosilicate ions absent[17, 21, 43]. In solutions[18] more dilute than 0.1 Nw there is no break in the equivalent conductivity curve at either $Na_2O:SiO_2$=2:1 nor at 1:1. At 0.1 Nw a break appears at a 2:1 ratio but not at a 1:1 ratio. A break at the 1:1 ratio first appears in the 0.5 Nw solution. Such data appear to be rather definite evidence that such a solution contains orthosilicate rather than a mixture of metasilicate and sodium hydroxide. That such a mixture is present as suggested by Harman is the more improbable

when we consider than in 1-2 Nw solutions the conductance of ratios 1:1 and 2:1 is practically identical.

In similar concentrations with respect to normality the per cent solution and C_{OH} are as follows:

Sodium hydroxide	0.1%	0.025
Sodium orthosilicate	0.115% ..	0.0105
Sodium metasilicate	0.155% ..	0.006

If sodium orthosilicate were a mere mixture in solution of sodium metasilicate and sodium hydroxide, the C_{OH} value for sodium orthosilicate should be the average of the other two values, 0.0155, whereas the value is 0.0105. Such a difference can hardly be interpreted other than as indicating the existence of an orthosilicate in solution. Study of the degree of hydrolysis of such sodium orthosilicate solutions[19] shows only 14.5 per cent hydrolysis of a 2 Nw silicate of 2:1 ratio as obtained from the OH^- determined experimentally, increasing to 35 per cent hydrolysis in 0.0159 Nw. The similar values for metasilicate are 1-7 per cent lower with decreasing concentration. These figures may be accepted as further evidence of the existence of orthosilicate. Plotted curves of data on hydrolysis show breaks at the orthosilicate level. In electrometric titration of sodium silicate with sodium hydroxide solution[22] a break in the curve occurs near the 2:1 ratio but none at lower ratios.

Properties of Aqueous Solutions

In dilute solution sodium metasilicate is almost completely dissociated, mainly ionically[20]. There is evidence which is indicative but not conclusive that addition of sodium hydroxide to a solution of low-alkali-ratio silicate gives a solution of different properties from that formed by dissolving the high-alkali-ratio silicate. This is a reasonable expectation so long as the solution is not heated since only part of the sodium silicate of the low-alkali-ratio silicate is in true solution, the balance being present as colloidally dispersed silicic acid or siliceous silicate.

Solutions of the higher silicates are largely noncolloidal[22, 32] although some colloidal properties are shown, even in orthosilicate solutions. The variation of alkalinity with concentration is important. The difficulties of measurement of alkalinity must be taken into account. In the range above pH 10.0, hydrogen electrode measurements are difficult to make and the corrections to the glass electrode become fantastic as pH 11.0 is approached. Colorimetric values are frequently used but are desirably checked by more than one indicator, a desire often impossible of realization. The principal source of error is salt error.

The most accurate values are believed to be those obtained by conductivity methods. Values for sodium hydroxide, trisodium phosphate, sodium carbonate, borax and sodium bicarbonate are obtained from Kiehl and Loucks[30], those for sodium orthosilicate and sodium metasilicate from Harman[19]. All data have been calculated to an anhydrous basis and considered in terms of percentages. A simple factor is necessarily applied to correlate the data with those for any hydrated salt, a factor which follows readily from the data in Table 1.

The values for sodium sesquisilicate were calculated on the assumption that the product behaves like an equimolecular mixture of sodium orthosilicate and sodium metasilicate, an assumption justified on the basis of the literature but not necessarily correct. They were then checked against published curves, largely in trade literature, and found to be in substantial agreement. This is believed to furnish adequate confirmation of their accuracy relative to other silicates.

Plotting data for pH on a system of linear coordinates given results in a form only suitable for comparison of widely dissimilar salts, sodium metasilicate and trisodium phosphate for example. Therefore in Figure 2 are shown data for some of the salts on a semilogarithmic scale. This gives a better idea of the relation of the widely differing salts. Silicates cannot be differentiated on that scale so only sesquisilicate is shown, selected as in general representative of the three related strongly alkaline silicates. Figure 3 on the same coordinates but a different scale endeavors to differentiate between the three silicates and sodium hydroxide.

Figure 4 is much more significant, giving the linear plotting of the C_{OH}. Only trisodium phosphate is shown as an example of the salts less alkaline than silicates because plotting of the others would give values closely approaching the base line. The three sodium silicates can be separately shown on this scale.

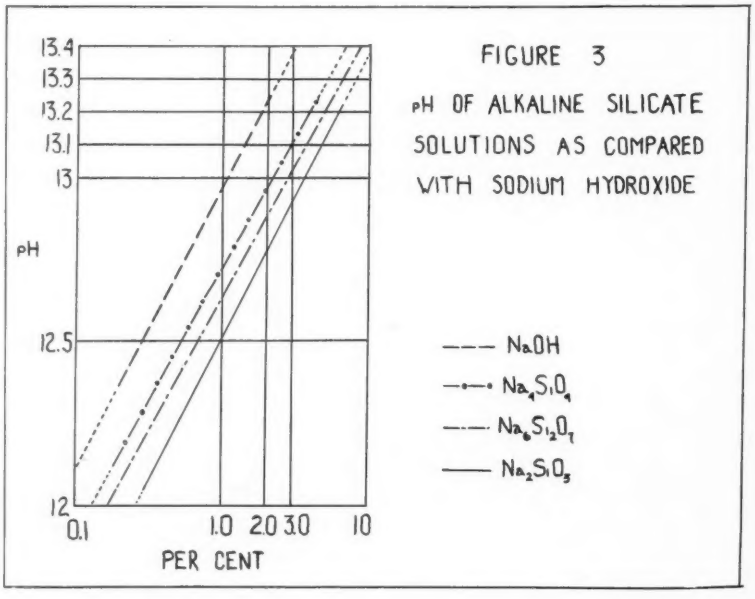
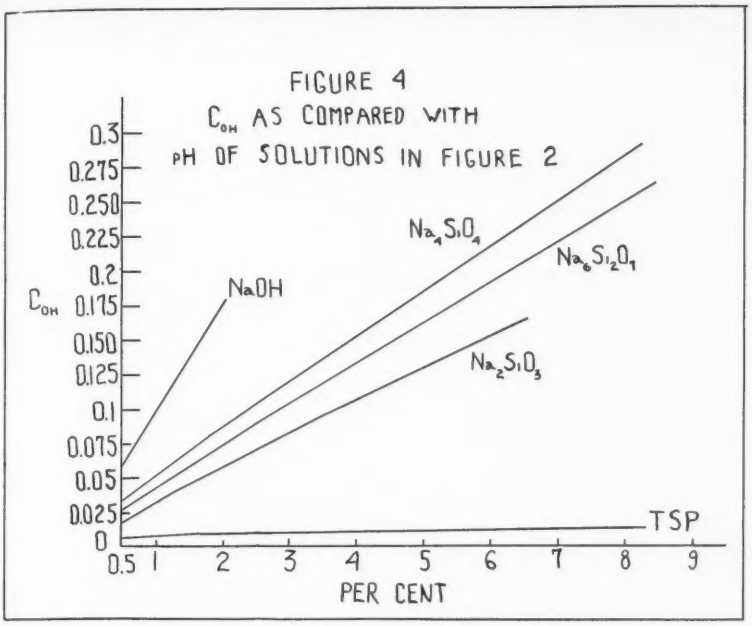


FIGURE 3

pH OF ALKALINE SILICATE SOLUTIONS AS COMPARED WITH SODIUM HYDROXIDE



The values are carried only to 0.5 per cent as Figure 5 on a different scale shows the values up to 1 per cent for the three silicates and up to 0.3 per cent for sodium hydroxide.

The common practice of expression of alkalinity of solutions in terms of pH is confusing at best. One naturally tends to consider each unit of change as equivalent, not noting that the change from 11.0 to 11.1 is ten times the change from 10.0 to 10.1. This tends to conceal inaccuracies in the data which can hardly be appreciated unless the data are converted to C_{OH} values.

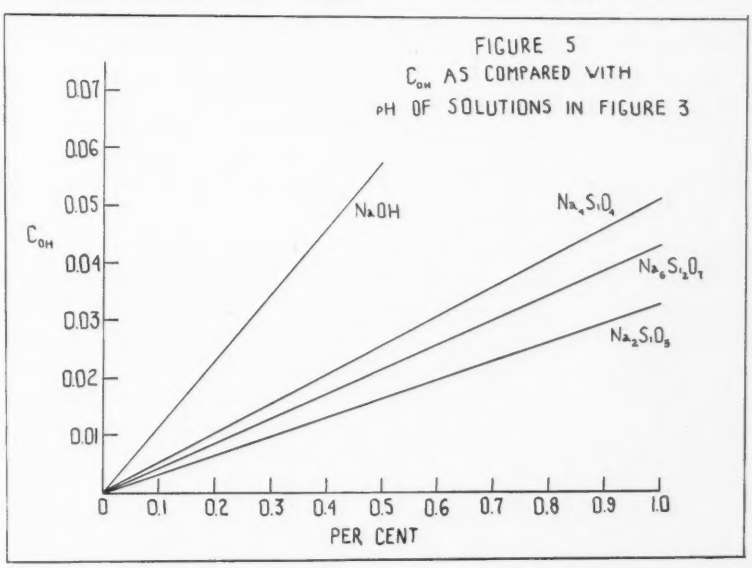
It is believed that Figures 4 and 5 give a form for quick and accurate relative comparison. Nearly complete hydrolysis of alkaline silicates is desirably assumed under 0.05 per cent. Practically speaking, such solutions do not have important industrial uses although they may have some limited applications. In general the pH values decrease with increase in temperature by an amount not particularly significant in industrial applications.

(To be concluded.)

References Cited

1. Bacon, W. N. Belgian Patent 192,592 (1906).
2. Baker, Chester L. Ind. Eng. Chem. **23**, 1025-32 (1931).
3. Baker, Chester L. U. S. Patent 1,898,707 (1933).
4. Baker, Chester L. Private Communication.
5. Baker, Chester L. and Jue, Ling Ralph, J. Phys. Chem. **42**, 165-9 (1938).
6. Baker, Chester L., Woodward, H. Tynham and Pabst, Adolf, Am. Minerologist **18**, 206-15 (1933).
7. Bloxam, Charles L. J. Chem. Soc. **12**, 177-98 (1860).
8. Bloxam, Charles L. J. Chem. Soc. **14**, 143-53 (1862).
9. Carter, John D. Ind. Eng. Chem. **18**, 248-52 (1926).
10. D'Ans, J. and Löffler, J. Ber. **63B**, 1446-55 (1930).
11. D'Ans, J. and Löffler, J. Z. anorg. allgem. Chem. **191**, 1-35 (1930).
12. Davies, Richard L. Chem. and Met. Eng. **43**, 606 (1936).
13. Erdenbrecher, A. H. Chem. Ztg. **39**, 583 (1915).
14. Erdenbrecher, A. H. Mikrokosmos **15**, 55-60 (1921); Z. anorg. allgem. Chem. **124**, 339-54 (1922).
15. Fritzsche, J. Ann. Physik. Chem. **43**, 135-8 (1838).
16. Gelstharp, F. and Parkinson, J. C. Trans. Am. Ceramic Soc. **16**, 109-16 (1914).
17. Hägg, Gunnar, Z. anorg. allgem. Chem. **155**, 21-42 (1926).
18. Harman, R. W. J. Phys. Chem. **29**, 1155-68 (1925).
19. Harman, R. W. J. Phys. Chem. **30**, 1100-11 (1926).
20. Harman, R. W. J. Phys. Chem. **31**, 355-73 (1927).
21. Harman, R. W. J. Phys. Chem. **31**, 511-18 (1927).
22. Harman, R. W. J. Phys. Chem. **31**, 616-25 (1927).
23. Jaeger, F. M. J. Wash. Acad. Sci. **1**, 49-52 (1911).
24. Jordis, Eduard. Z. angew. Chem. **19**, 1697-1701 (1906).
25. Jordis, Eduard. Z. angew. Chem. **20**, 1410-12 (1907).
26. Jordis, Eduard. Z. anorg. Chem. **56**, 296-319 (1907).
27. Jordis, Eduard. Z. anorg. Chem. **58**, 98-101 (1908).
28. Jordis, E. Chem. Ztg. **38**, 922 (1914).
29. Kracek, F. C. J. Phys. Chem. **34**, 1583-98 (1930).
30. Kiehl, Samuel J. and Loucks, Russell D. Trans. Electrochem. Soc. **67**, 77-96 (1935).
31. Kittl, Erwin. Z. anorg. Chem. **77**, 335-64 (1912).
32. Main, V. R. J. Phys. Chem. **30**, 535-61 (1926).
33. Mallard, M. E. Ann. chim. phys. **28**, 86-108 (1873).
34. Morey, G. W. J. Am. Chem. Soc. **36**, 215-30 (1914).
35. Morey, G. W. and Bowen, N. L. J. Phys. Chem. **28**, 1167-79 (1924).
36. Morey, G. W. U. S. Patent 1,948,-730 (1934).
37. Morgan, O. M., Can. J. of Res. **8**, 429-34 (1933).
38. Moss, Henry V. and Snell, Foster Dee. U. S. Patent 2,046,192 (1936).
39. Niggli, Paul. J. Am. Chem. Soc. **35**, 1693-1727 (1913); Z. anorg. Chem. **84**, 229-72 (1914).
40. Rhodes, F. H. and Bascom, C. H. Ind. Eng. Chem. **23**, 778-80 (1931).

(Turn to Page 74)



A well-known estate producer of citronella in Ceylon is photographed by the author.

CEYLON

Based on a personal survey made in Ceylon

FOR determining the purity of citronella oil, the "schimmel test" was originally devised by Schimmel & Co. with the best intentions of giving to buying agents in Ceylon a simple and quick field test. Certainly the originators of the test cannot be held responsible for the abuses into which it has fallen. Although attacked again and again by buyers abroad, exporters, producers and government officials, the test has remained the basis of practically all contracts. Unfortunately, however, it has been misused to the extent that instead of helping the field buyer to detect gross adulteration when purchasing small parcels from native distillers and intermediaries, it has developed into a criterion of a certain market quality which is adulterated to the limit allowed by the test.

Schimmel Test: There is some confusion in the trade as to the exact interpretation of this test which, since its introduction in 1898, has been widely used. There are altogether three different types of variations of the "Schimmel test," two of which are employed under the tentative names, "old Schimmel test" and "new Schimmel test." These two interpretations are, however, entirely separate from the so-called "raised Schimmel test" which is seldom used in the trade. An exact description of the working methods will be given later on. Suffice it to say here that:

1. The "old Schimmel test" is the one most generally employed in the trade for analyzing the oils as a basis for contracts. It permits a rather wide range of personal interpretations and, therefore, is the least stringent of the three tests. Even when correctly interpreted, it allows for the presence of 7 and even more per cent of petroleum or kerosene.

2. The "new Schimmel test" is also used in the trade but to a lesser extent and by more careful buyers who insist upon higher quality. It offers a much finer criterion of the purity of Ceylon oil than the "old Schimmel test" but still allows for the presence of about 4 per cent kerosene or petroleum.

3. The so-called "raised Schimmel test" is a much more exacting test than the "old" or even the "new Schimmel test." It practically excludes any adulteration with kerosene or petroleum. Most of the pure, freshly distilled oils meet this test without any difficulty, except perhaps certain estate oils which for unknown reasons seem to be less soluble, even when freshly distilled. This, however, is the exception rather than the rule. The "raised Schimmel test" would, therefore, be an ideal test were it not for the unfortunate fact that slightly old oils will not readily pass it. For that reason, the test is very seldom applied in the trade.

Summarizing, it appears that even when correctly interpreted the "old" or "new Schimmel test" leaves room for a certain amount of kerosene or petroleum. It is of little value where the adulterant is present in small quantities only. Therefore, the test is not effective; in fact, it encourages and almost forces adulteration whenever the buyers in that highly competitive market stipulate f.a.q. oils, basing quality on the "Schimmel test." The inaptitude of the test, combined with the usual lassitude of producers, shippers and buyers abroad who are easily inclined to follow the path of least resistance, has resulted in the fact that today pure oils cannot be obtained when the buyers contract on the "Schimmel test," especially the "*old* Schimmel test."

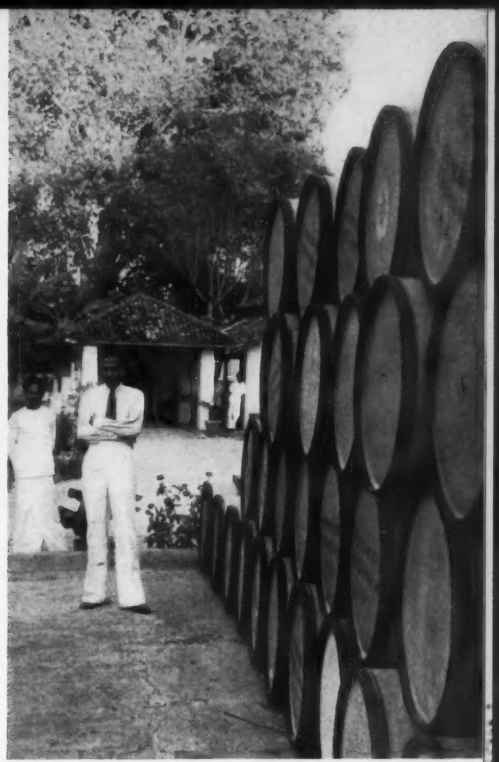
The writer recalls a very animated argument one night with a native exporter in southern Ceylon

CITRONELLA

by *Dr. Ernest Guenther*

Fritzsche Brothers, Inc.

Part II



Citronella in drums awaiting export from the establishment of a shipper in Matara, Ceylon.

regarding purity of Ceylon citronella oil. This exporter contended that he was perfectly justified in shipping to the United States citronella oil cut down with 7 or more per cent of kerosene as long as his quality passed the "Schimmel test" upon which his contracts were based. The writer, on the other hand, tried to point out that the United States Customs officials are by no means bound by any stipulation in a private contract. They considered an adulterated oil a compound and impose duty together with heavy fines, if they detect any addition, especially if the added product is not a natural constituent of the oil.

There is no secret about the addition of kerosene to Ceylon oils. Every exporter and most distillers are perfectly frank about it. One large estate owner told the writer that his estate oil was pure, while his market oil contained 4 per cent kerosene, the drums of which the writer saw. After buying a lot from a distiller, the intermediary might add a little more kerosene, with the shipper finally going to the limit permitted by the "Schimmel test" which forms the purity criterion of the contracts with the buyers abroad. A very large exporter in the south of Ceylon told the writer that he purchases his parcels of oil on the following basis:

To a sample he adds first 1 per cent kerosene, then another 1 per cent and so on, up to the point when the sample cut with kerosene no longer passes the "Schimmel test," the interpretation of the latter being, of course, a matter of personal judgment and interpreted perhaps as liberally as possible. For each per cent of kerosene which can be added, he pays 1 rupee above the local market price for f.a.q. oils.

The adulterants consist of low-boiling petroleum (gasoline, benzine) which, however, can be detected quite easily by a simple flash point determination, or of kerosene. During the writer's stay in Ceylon the latter cost about 12 rupees, against 75 rupees for citronella oil then quoted on the spot of production. Kerosene cannot be detected by a simple flash point test and must be fractionated out of the oil, the "Schimmel test" not being an infallible criterion for the presence of limited quantities of kerosene. A

Left: Exterior view of a distillery in South Ceylon. Right: Citronella drums filled and awaiting shipment from the producing regions.

product called mineral turpentine has lately been offered freely in Ceylon. It consists of a fraction between gasoline and kerosene and is said to be more soluble than kerosene and to pass the "Schimmel test" much more easily. It is claimed that up to 10 per cent of this product can be added to citronella oil without affecting the "Schimmel test," at least not in its wider interpretation.

The Ceylon Government is quite aware of the damage which this practice of adulteration has been inflicting upon the name and the standing of the Ceylon oil, the latter being already seriously threatened by the large quantities and low prices of the Java citronella oil. Many efforts have been made toward the enactment of legislation aiming at a strict Government control of all outgoing shipments, including a certificate of purity such as is necessary in Java. It has even been suggested that the entire citronella industry of Ceylon be made a state monopoly. So far the Government's efforts have proven unsuccessful because of strong resistance by the exporters and also because of the necessity of organizing, in the case of Government control, a quite costly analytical laboratory manned by a staff of competent chemists. Undoubtedly, the task could be accomplished, as Java has shown in such a splendid way that it can, but the undertaking would require the good will of producers and exporters alike. Another objection of the exporters against government control is that the trade has now become used to the adulterated oil, accepts it, absorbs it and is unwilling to pay a cent more for the pure oil. Besides, business is going well on this basis, so why disturb a sleeping dog?

The logic of this argument is obviously weak and shows only indifference and mental laziness. To follow the path of least resistance is dangerous policy in the essential oil trade. What is permissible for Ceylon citronella oil could, by the same token, apply to every single essential oil, and the buyers are, in general, only too easily tempted to accept a somewhat cheaper essential oil provided its quality is guaranteed under some pretext of standard or test.

There is certainly no sense in the practice of purchasing an oil of citronella containing up to 7 per cent and even more of a kerosene which is usually of American origin, has been shipped from the United States to Ceylon, and then returned in the form of citronella oil. The price difference between f.a.q. citronella oil and estate oil fluctuates around 2 cents per pound and it is difficult to understand why any intelligent buyer should purchase an oil 7 or more per cent inferior for such a negligible difference in price. It would seem more logical to import the pure oil and add the kerosene here in the United States, if the addition is necessary at all. But, since kerosene has no odor value, consumers could use 7 per cent less oil in their formulas and actually save money. Citronella oil frequently undergoes price fluctuations which are sometimes very marked, with the buyers perfectly willing, apparently, to pay these higher prices. There seems to be no reason, therefore, why the small difference of 2 cents should prevent any manufacturer from using a pure oil.

May the writer be permitted to set down a few suggestions which might help to remedy the present unhealthy situation:

1. Government regulations should be enacted in Ceylon to absolutely prohibit the export of any lots of citronella oil containing kerosene or petroleum. In other words, in future only the genuine oil must be exported. Leading politicians informed the writer during his stay in Ceylon that such legislation could be enacted easily. The control could be organized according to the example set by Java, but on a much smaller scale. A simple control laboratory equipped for routine analysis would be sufficient.

Of course, the Ceylon shippers of citronella oil cannot be expected to carry the brunt of the control and alone be held liable to fines for the presence of kerosene. They, too, will have to protect themselves when buying from the natives, but the methods of detecting gasoline, kerosene and alcohol are relatively simple and could be carried out even by agents of the exporters. Application of the "new Schimmel test" will eliminate the worst forms of adulteration. Producers and field brokers in Ceylon would soon realize that adulterated lots were no longer acceptable. The obstacles are not much greater than those overcome by the Java Government.

2. Contracts between agents and buyers abroad and the shippers in Ceylon should in future be based upon genuine oils only, stipulating absolute purity and absence of any addition such as kerosene, petroleum, alcohol or fatty oils.

3. The Essential Oil Association of the United States can help immeasurably by insisting upon the import of only genuine Ceylon citronella oil and by an educational campaign impressing upon buyers the economy of using the genuine oil rather than the oil cut with worthless kerosene.

4. In case the above measures fail, the United States Customs officials could check up on some of the larger shipments of Ceylon citronella oil, declare them compounds whenever they detect the presence of kerosene and impose the usual fines. This would be a quick and practical means of doing away with the nuisance of importing into this country adulterated citronella oils.

Suggesting these measures, the writer speaks from an absolutely unbiased point of view and entirely in the interests of Ceylon. The objection may be raised that today estate oils are not produced in sufficient quantities to cover a sudden large demand. Shippers claim that at present only 25 to 33 per cent of their purchases consist of estate oil, the balance being ordinary market oil containing kerosene. As pointed out, the

exports consist of only 5 per cent estate oil and 95 per cent market oil. Therefore, a great amount of the estate oil is cut with kerosene in order to fill the requirements for f.a.q. oils or is used for bulking with purchased ordinary market oils in order to improve their solubility so that they may pass the "Schimmel solubility test." The quantities of genuine oils available in Ceylon through the small producers and field brokers could undoubtedly be increased as soon as the latter realize that the exporters will accept only pure oils.

Total Exports: The following quantities of citronella oil have been exported during the last few years:

	Cwt.
1934	13,630
1935	12,021
1936	12,358
1937	13,746
1938	14,165
1939	12,901

About 40 per cent of last year's total exports went to the United States and more than 30 per cent to the United Kingdom, as can be seen from the following tabulation:

Destination	*Pounds*
Australia	64,090
United Kingdom	494,689
British India	69,404
Canada	22,666
New Zealand	10,728
Union of South Africa	18,419
Argentina	6,720
Belgium	71,274
Egypt	27,170
France	12,142
Germany	90,109
Netherlands	39,907
United States	604,364
TOTAL	1,531,682

Physical and Chemical Properties: Samples of pure estate oils which the writer collected during his stay in Ceylon showed the following properties:

	"A"	*"B"*	*"C"*	*"D"*	*"E"*	*"F"*
Specific Gravity @ 15° C:	0.907	0.908	0.907	0.899	0.900	0.900
Optical Rotation:	—11°42′	—9°40′	—13°45′	—14°10′	—14°36′	—14°40′
Refractive Index @ 20° C:	1.4826	1.4842	1.4837	1.4792	1.4799	1.4800
Total Geraniol Content:	61.1%	60.4%	59.3%	59.3%	57.6%	57.6%
Citronellal Content:	9.2%	7.7%	8.9%	14.2%	12.3%	12.3%
Solubility @ 20° C:	Soluble in 1 volume of 80% alcohol; opalescent in 4.5 volumes and more.	Soluble in 1 volume of 80% alcohol; opalescent in 3.5 volumes and more.	Soluble in 1 volume of 80% alcohol; opalescent in 5 volumes and more.	Soluble in 1 volume of 80% alcohol; opalescent in 10 volumes.	Soluble in 1 volume of 80% alcohol; opalescent with more.	Soluble in 1 volume of 80% alcohol; opalescent with more.

(The solubility of samples "A," "B" and "C" was determined according to the "new Schimmel test," while for samples "D," "E" and "F" the "old Schimmel test" was applied.)

These estate oils were of excellent quality and quite superior to the regular market oil in regard to constants and odor.

Many f.a.q. oils were analyzed in our laboratories. Going through our records from 1910 to this year, we find the following limits:

Specific Gravity @ 15° C: .0.897 to 0.906
Optical Rotatoin: . . .—11°50′ to —15°35′
Refractive Index @ 20° C: . . . . . .1.4785 to 1.4839
Total Geraniol Content: .52.9% to 59.7%
Citronellal Content: . . . . . .7.3% to 9.2%
Solubility @20° C: . (According to the "old Schimmel test") From clear in 1 volume and more of 80% alcohol up to 10 volumes to clear in 1 volume of 80% alcohol, strongly opalescent in 10 volumes. No oily separation in 10 volumes of 80% alcohol at 20° C.

Note: The specific gravity of good oils rarely falls below 0.898 and the total geraniol content rarely below 54 per cent. However, oils with gravities as low as 0.897 and total geraniol contents as low as 52.9 per cent were among the samples which, except for the addition of kerosene and petroleum, were pure. The constants of the regular market oils, as compared with those of the estate oils, show to what relatively low standard the trade has become accustomed.

(*Turn to Page 73*)

Left: The dried citronella grass is unloaded at the distillery. Center: Type of native women who do the harvesting. Note the sickle used for cutting the grass. Right: Close-up interior view of a distillery.

New Products and

Clean Products Co., Columbus, Ohio, has just adopted a new container for its hand cleaner. A revolving pour-out opening in the cover increases sifting efficiency. Package by Cin-Made Corporation, Cincinnati, Ohio.

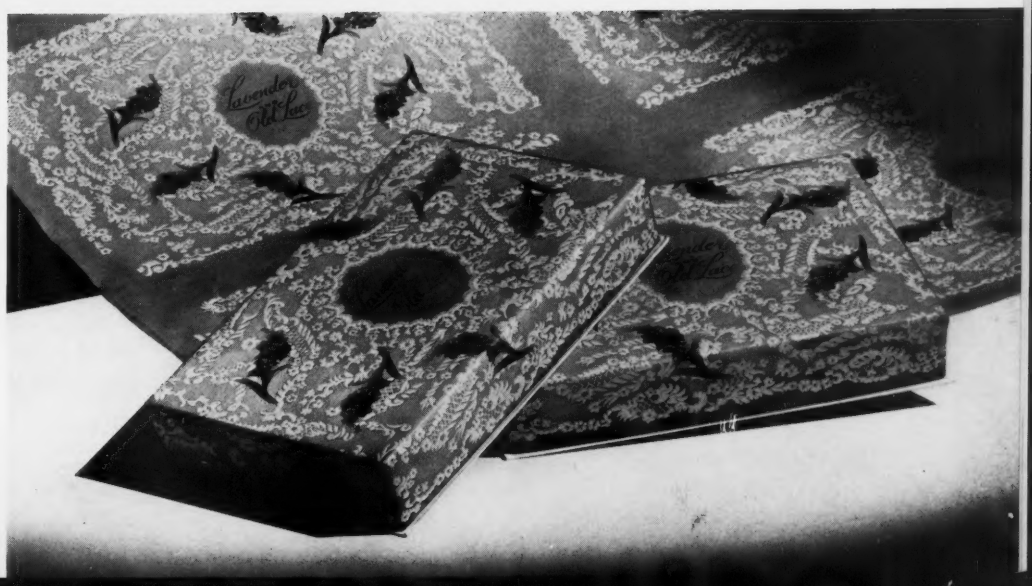
This attractive counter display is successfully merchandising "Moonrose" complexion soap for Cooter Brokerage Co., Chicago. The unit is four cakes, plus a cellophane wrapped wash cloth.

Pine Tree Products Co., Newport, N. H., is making effective use of a "Travel Kit" package of "Pine Tree" soap to boost the unit of sale. Twelve cakes are packed in a handy carrying carton, supplied by Hinde & Dauch Paper Co.

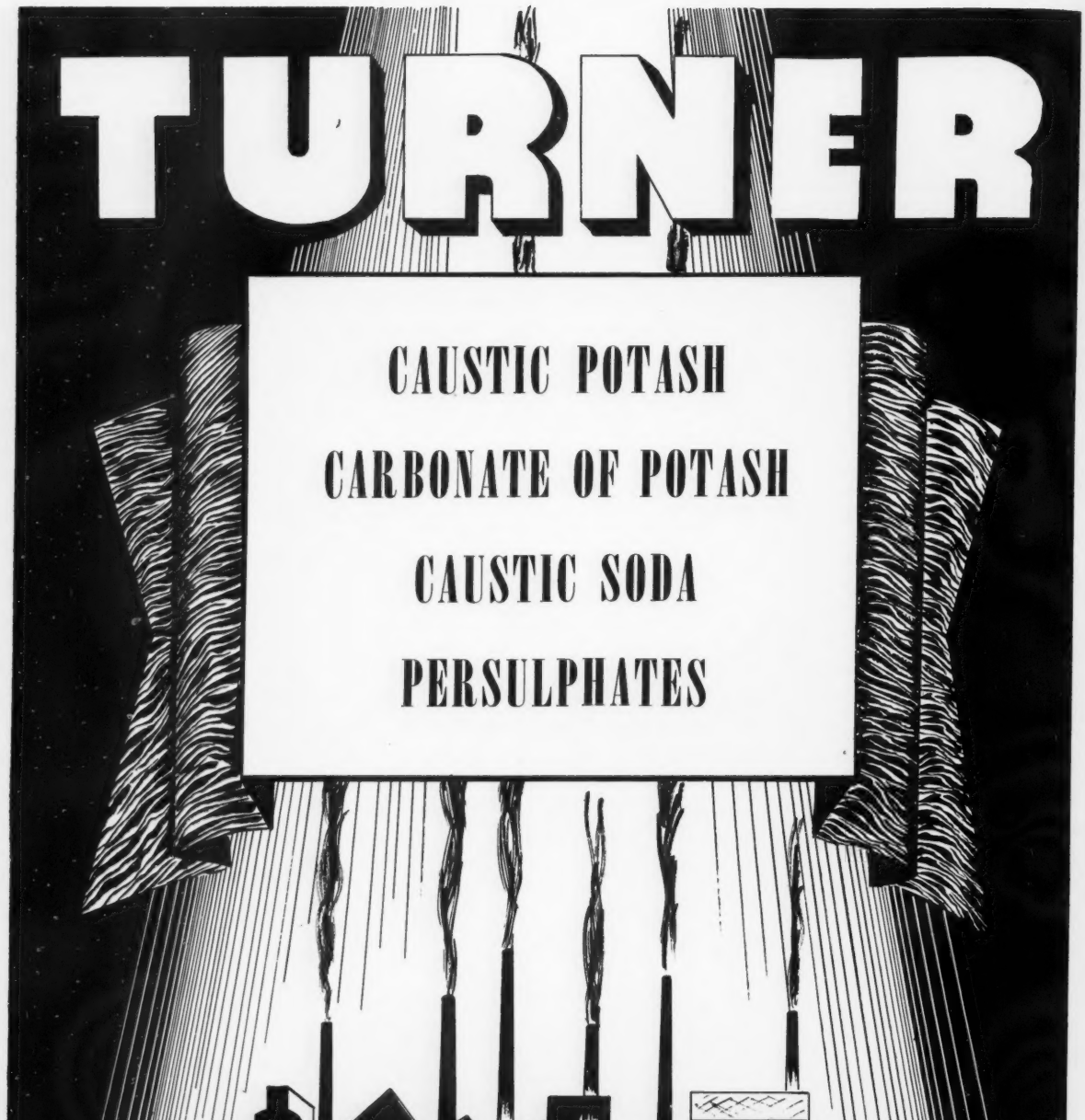
Packages

Yardley & Co., New York, have just anncunced a new series of packages for the coming Christmas gift season. Included in the list is a unit featuring "April Violets" soap, packed with cologne and perfume.

Shulton, Inc., New York, has recently introduced a new line of soaps and toiletries under the family name "Friendship's Garden." Odor and style of packaging are distinct from the "Early American" line.



An old lace background is simulated in this attractive box wrap for Hewitt Soap Company's newly re-packaged toilet soap, "Lavender and Old Lace." Design and lithography by National Process Co., New York.



JOSEPH TURNER & COMPANY

RIDGEFIELD, NEW JERSEY

83 Exchange Place
Providence

Telephones:
Ridgefield—MOrsemere 6-5630
New York—CHickering 4-7531

40th St. and Calumet Ave.
Chicago

News....

Issue Soap Advertising Guide

Cleansing agents, particularly soaps, are the subjects covered in a recently issued supplement to its "Guide to National Advertising" by the National Better Business Bureau, Chrysler Building, New York. The new supplement is the beginning of a section on cleansing agents and includes an index to this section. The information covered is in the form of a review of the various types of soaps, shampoos, etc., their properties, and general advice on advertising claims which may or may not be permitted under the Wheeler-Lea Act and the Food, Drug & Cosmetic Act. Various rulings and contentions of the Federal Trade Commission in relation to soap advertising claims are given and explained.

Lever, Ltd., Honors Veterans

Three war memorial plaques honoring employees of Lever Bros., Ltd., who served in World War I, were recently unveiled in the main rotunda of the company's new factory in Toronto. Major G. A. S. Nairn, president of Lever Bros., Ltd., dedicated the plaques in a ceremony attended by the company's entire Toronto staff.

Chicago Perfumers Meet

The Chicago Perfumery, Soap and Extract Association held their first meeting since last Spring on September 10th at the Bismarck Hotel. In addition to routine business, plans were discussed for the annual Christmas Party.

Begin Trading In Bean Oil

Trading in soy bean oil futures was inaugurated recently in the New York Produce Exchange in recognition of the sharp rise in importance of the oil as an industrial raw material. The first trading took place on September 3rd.

W. L. Schultz Speaks in Boston

William L. Schultz, president of Shulton, Inc., New York, was guest

William L. Schultz

of honor and speaker at a luncheon in Boston, on September 11, at which he met the city's press. Speaking on the theme, "America for the Americans," Mr. Schultz emphasized that America has become independent of Europe for its perfume requirements and stated that there will be no shortage of perfuming materials in this country because of world conditions.

Iowa Soap Co. Expands

Two storage tanks for tallow and coconut oil, each weighing 50,000 pounds, have recently been installed at the Iowa Soap Co. plant at Burlington, Iowa. Including installation, the expenditure for the new tanks will be $8,000, according to John Hodson, factory superintendent. Another piece of equipment recently installed in the plant is a $60,000 stream-lined dryer for the manufacturer of soap flakes.

Brillo Shows Record Sales

Brillo Manufacturing Co., Brooklyn, in the second quarter and first half of 1940, showed a larger volume of sales than for any other corresponding periods in its history, Milton B. Loeb, Brillo president reported recently. Net earnings, however, were lower than for the same periods of last year. For the six months ended June 30, 1940, net profits were $131,385, equal to 75 cents each on 145,310 common shares. This compares with profits of $147,962, or 86 cents a share, for the first six months of 1939.

Fire At Jergens Plant

A fire which started recently in a storage room at the Cincinnati plant of Andrew Jergens Co. was extinguished before it had a chance to spread to other parts of the plant. One employee was injured and losses were estimated at $1,000. The flames were confined to the top floor of the factory in a storage room near the kitchen and cafeteria.

Soap on the European Front

Soap is now being rationed in France to the extent that each householder is allowed only one bar of soap, "Savon de Marseilles," weighing 125 grams, a month for the equivalent of the laundry of thirty persons. William Parker, special correspondent to the New York *Sun*, reported having seen recently a line of fully 200 persons in front of a Marseilles department store to buy single bars of bath soap at a cost of 7 cents American. C'est la guerre!

Wellesley Co. Appoints Agency

Wellesley Soap and Chemical Co., Newton Lower Falls, Mass., auto cleaning compounds, recently started advertising, with Cory Snow, Inc., Boston, as its agency.

Introduce "Anti-Sneeze Rinso"

Lever Bros. Co. is currently advertising a new "Anti-Sneeze" Rinso for laundry and kitchen use. Developed to prevent "wash day hay fever" "for most women," the product, it is claimed is "98 per cent free of the 'soap dust' that causes sneezing." Prominently displayed in the copy is the charge that "There's up to a quarter pound of irritating 'soap dust' in many other widely used package soaps."

Armour Veteran Dies

Edward O. Mullane, who for twenty years was employed in the industrial soap department of Armour & Co., Chicago, died Sept. 1 in Mercy Hospital, that city. Mr. Mullane, who was 60 years old, is survived by his widow, Irene. Burial was at Cincinnati.

Bims to Golf Oct. 8

Bims of New York will hold its final golf tournament of the 1940 season at the Ridgewood Country Club, Ridgewood, N. J., on October 8. The final party of the year will be a gala affair with numerous prizes, entertainment, and a special dinner, according to Martin F. Schulties of Hewitt Soap Co., chairman. A delegation of the Boston Bims headed by its chairman, Robert F. Kelly, will be in attendance.

A the last tournament, held at Cherry Valley Country Club, Garden City, L. I., on September 10, Harold Altshul of Ketchum & Co., was the winner of first prize followed by August H. Bergman of Oxzyn Sales Co. and Louis Mocq, T.G.A. counsel. Other prize winners were J. E. Gabrielson of Allied Products, F. A. Nicholson of Richard-Taylor-Globe Corp., Harry Leyser, John S. Baker of National Can, Charles C. Bryan of Fritzsche Brothers, F. J. Lueders of George Lueders & Co., Frank W. Green of National Aniline & Chemical, Joseph A. Huisking of Fritzsche Brothers, Frank Mahr of Blake Manufacturing Co., Walter Fretz of Dodge & Olcott, Alex D. Henderson of Dr. Swett's Root Beer Co. (he shot 74), E. F. Neimeth of National Magnesia, B. T. Bush of Bush Aromatics, Inc., and S. E. Umensetter of Topics Publishing Co.

F.W.D.A. to Meet In Virginia

The twenty-fifth annual convention of the Federal Wholesale Druggists' Association, New York, will be held September 8 to 11 at the Homestead, Hot Springs, Va. A feature of the four-day convention is to be an address by Thurman W. Arnold, Assistant Attorney General and head of the Anti-Trust Law division of the Department of Justice, who will speak on the operations of his division. The sports program will include the annual golf tournament, tennis, riding and skeet shooting.

Carman & Co. Declare Dividend

Carman & Co., New York, laundry supplies, recently declared a dividend of 50 cents a share on its Class B stock payable Oct. 1, 1940, to stock of record September 16, 1940. This is the first dividend which has been declared by the Carman company on class B stock since Jan. 25, 1931, when a payment of 25 cents a share was made.

New Quaker Product

Quaker Chemical Products Corp., Conshohocken, Pa., has just announced the development of an organic chemical for the soaking treatment of gum silk to prepare it for knitting of full-fashioned hosiery. Known as "Quaker Diapene 1033," it is designed to displace the usual soluble fatty and fatty-mineral combinations for this purpose and is said to require only thirty minutes for soaking regardless of whether open tub, circulating bath or machine soaking is employed.

Hecker Earnings Drop

Hecker Products Corp., New York, and its subsidiaries recently reported earnings for the fiscal year ended June 30, 1940, of $801,843, or 52 cents each on 1,546,500 common shares. Net profits for the preceding year was $1,969,903, or $1.21 each on 1,629,702 shares.

Olive Castile Held Best

The majority of soaps labeled "castile" are made wholly or in part from fats other than olive oil, stated Dr. Frederick Damrau, New York medical research director, in the September 4 issue of the *Medical Record*. The medical profession expects castile soaps to be made from sodium hydroxide and pure olive oil, Dr. Damrau stated, and added that substitute "castile" soaps are of inferior quality and are more likely to cause irritation than the 100 per cent olive oil soaps. Of eight brands tested by the patch test, as well as by introduction of soap solutions into rabbits' eyes, *Sapo Durus U.S.P.*, and green soap U.S.P., were found to be least irritating. The six other soaps, labeled "castile," and some of them recommended for babies, were found to be made wholly or partially from fats other than olive oil, and to be more irritating. Laco Brand castile was the castile soap used in the tests.

Build Canadian Copra Plant

A $200,000 copra pressing plant will soon be constructed on Burrard Inlet, Vancouver, according to reports from the Dominion Department of Trade and Commerce. The plant will have a capacity of 1,500 tons of copra per month, producing 900 tons of coconut oil and 600 tons of copra meal, it is estimated. Directors of the company building the plant are Sir Walter Carpenter, R. O. Capney, R. F. Riddell, E. E. Duckerfield and John Raymond.

Honor Currens on Retirement

A testimonial dinner honoring Turner F. Currens who announced his retirement last month as vice-president and manager of the Eastern sales division of Norwich Pharmacal Co., New York, was held September 19, at the Hotel Pennsylvania, New York. About three hundred friends and associates of Mr. Currens in the drug and chemical trades were present. Ralph E. Dorland, of Dow Chemical Co., officiated as master of ceremonies. Guy L. Marsters has succeeded Mr. Currens who will continue as a director of the company.

Chicago Golfers Beat Detroit

The Golf Auxiliary of the Chicago Drug and Chemical and Chicago Perfumery, Soap and Extract Associations defeated the golfers of the Allied Drug and Cosmetic Association of Michigan at Olympia Fields C. C., Chicago on September 13th. The victory gives Chicago possession of the Fort Dearborn trophy for one year and ties the series at three apiece. The Detroit delegation of twenty-two was led by their officers Walter Daniel, A. S. Bedell and M. G. deNavarre. Robert Hereford, head of the Chicago Golf Auxiliary, presided at the banquet which followed the golf and in addition to the Detroit officers, speeches were made by C. L. Drum and H. B. Elwell of Chicago. Prizes were won by the following: Class A, Harry Larson, D. K. Olin, Ray Vicary, James Leavitt and B. Walmsley; Class B, A. J. Ratz, H. J. Edmon, G. Snyder, Walter Johnson and G. Carlysle; Class C, W. Elliott, W. I. McDonald, Donald Melville, R. K. Snow and R. Stoddard; Class D, W. Russell, Joseph Wolff, Walter Daniel, A. S. Bedell, and Robert Gugler. Guest prizes were won by G. Comerford, C. H. Taylor, F. K. Thayer, G. Driscoll, Harold Cummings, H. Dunning, D. Sappenfield, A. O. Nelson and H. J. Hoole. Arrangements for the day were handled by J. A. Gauer of Chicago and W. I. McDonald of Detroit.

Report on Dish Washing Study

A progress report on a study of dishwashing being conducted at the New York State Agricultural Experiment Station at Geneva, New York, was given at a meeting, September 20, at the Pennsylvania Hotel, New York, attended by a group of manufacturers of detergents and dish washing machines who are sponsoring the project. The work is being done at the Geneva Station by W. G. Walter under the general supervision of Dr. G. J. Hucker. Its general purpose is to arrive at methods by which the efficiency of dishwashing machines, and materials may be evaluated. Work up to this point indicates that it may be possible to set up an index of cleaning ability both for various dishwashing detergents and for dishwashing machines. Such factors as length of washing time, length of rinse, temperature of wash water and temperature of rinse water are special objects of study.

W. G. Walter and Dr. G. J. Hucker

Mr. Walter outlined a test method for determining cleaning indexes, under which soiled glass plates are washed, rinsed and dried under standard conditions and then treated with decolorizing carbon before being exposed to light from a photoelectric cell. The relative amount of light transmitted by the treated plates is taken as a measure of the soil remaining on the surface, (the carbon being shaken over the plate surface and allowed to adhere to the particles of soil to make the results more readily recordable.) The difference in readings between washings using plain water and wash water containing an 0.15 per cent concentration of detergent is computed as an index of cleaning ability.

Stamina for Spineless Soap — Warner TSPP

Some soaps quickly broke down under the ordeal of hot water, until their makers "discovered" the "newest" of the phosphates and performed a major operation—gave those soaps new backbone with **TETRA SODIUM PYROPHOSPHATE.**

The swiftness with which TSPP has been adopted to prevent hydrolysis of powder, chip and flake soaps has been paralleled by equally swift acceptance in other applications.

More than a decade of experience with TSPP has given us a sound background of technical knowledge which we will gladly make available to you. Our production facilities of today are ample to meet your present and future needs.

Your inquiry for price quotations, samples and technical cooperation will have immediate attention.

OTHER WARNER CHEMICALS

Caustic Soda
Acid Sodium Pyrophosphate
Phosphoric Acid
Sodium Phosphates
Liquid Caustic Potash
Chlorine, Liquid
Sulfur Chloride
Trichlorethylene
Barium Carbonate
Perchlorethylene
Carbon Bisulfide
Sodium Sulfide
Bromine
Blanc Fixe
Carbon Tetrachloride
Epsom Salt
Hydrogen Peroxide
Alumina Hydrate, Light
Chemical Grade Magnesia

CHEMICAL **WARNER** COMPANY

DIVISION OF

WESTVACO CHLORINE PRODUCTS CORPORATION

CHRYSLER BUILDING, NEW YORK, N. Y.

Apart from their investigation of dishwashing as such, Dr. Hucker and Mr. Walter have also pursued a study of sterilization of drinking glasses and china ware. They have developed what they describe as the "contact plate" method for determining the number of organisms on dishes, which they consider superior in many respects to the "swabbing" technique now in general practice for such determinations. The "contact plate" method has the advantage of requiring much less equipment and being more readily adaptable to field work. It was their observation as the result of many field tests that hand rather than machine dishwashing, and repeated use of soiled towels, are two of the factors most responsible for high bacteria counts on restaurant china ware. Adequate rinsing with sufficient hot water, they indicated, would aid materially in reducing contamination.

Following more extensive consideration of the results of the work by the group of sponsors, a decision will be announced shortly as to whether or not it will be continued.

—— ♦ ——

W. G. Moore of D. & O. Retires

William G. Moore, manager of the Chicago branch of Dodge & Olcott Co. and associated with that firm for 54 years, retired on September 30. It is his intention to live at his Florida home in Bradenton. F. S. Topper who has worked with Mr. Moore in the Chicago area for many years, has been appointed manager of the Chicago branch. Mr. Moore entered the employ of Dodge & Olcott in 1886 at the old William Street store in New York. He became a member of the sales staff and for many years covered upper New York state and Eastern Canada. In 1919, he became manager of the Chicago office. For many years, he was second vice-president of the company. He was one of the few remaining men in the organization who worked personally under Richard J. Dodge, grandfather of Francis T. Dodge, now president of the company.

In announcing the retirement of Mr. Moore, the company stated: "After 54 consecutive years of devoted and invaluable service to the organization, Mr. Moore will retire and enjoy a well-earned rest. At a dinner given in his honor on Sept. 19, at the Hotel Lafayette, New York, many tributes to his loyalty, industry, and unfailing geniality were voiced in the most affectionate terms. He will be greatly missed by a host of friends in the essential oil and allied trades."

—— ♦ ——

Daley Joins Columbia Alkali

A. E. Daley has just joined the sales staff of Columbia Alkali Corp., chemical sales division of Pittsburgh Plate Glass Co., and will operate on sales in the Chicago metropolitan area. Mr. Daley was formerly associated with Colgate-Palmolive-Peet Co. and A. C. Drury & Co., for a period of nine years with each company.

—— ♦ ——

Soap Sculptors Win $2,200

Prizes totaling $2,200 were won by amateur American sculptors who successfully competed in the sixteenth annual soap carving contest sponsored by Procter & Gamble Co., Cincinnati. Over 100 awards, ranging from $200 to $10 went to winners in twenty-one states, it was announced recently by the committee in charge of the contest.

Michigan Caustic Booklet

A booklet on the history, production, properties, uses, packaging, and handling of caustic soda has just been issued by the Michigan Alkali Co., Wyandotte, Mich. It also contains a brief history of the company founded by Captain John B. Ford in 1891 when he was eighty years of age. The booklet comprises 56 pages and is well illustrated, containing also numerous diagrams showing dissolving equipment, several types of unloading equipment for liquid caustic, and design for handling and storage. Numerous tables and charts on specific gravity at various temperatures, gravity at various concentrations, Baume conversion tables, viscosities at various concentrations, corrosion rate on mild steel, dilution charts and their use, methods of testing and analysis, and temperature conversion. Copies are available to interested manufacturers.

—— ♦ ——

Mallinckrodt Head Dies

Oscar L. Biebinger, president of Mallinckrodt Chemical Works, St. Louis, for fifteen years, died on September 17. He was nearly eighty-one years old. Mr. Biebinger started with the Mallinckrodt firm in 1888. He became a director and secretary of the company in 1893 and was elected president in 1925.

Prize winners in the latest P & G soap sculpture competition were these two unusual pieces,—"The Scrubwoman" and "Lincoln."

More Suds from Less Soap!
NEW FREE-RINSING ACTION
LEAVES CLOTHES SOFTER
SWEETER-SMELLING
NO MORE DRAB, YELLOW WASH
Clothes Come Out "Spanking" White In Spite of Iron Water
Say Goodbye to "Housemaid Hands"
HANDS STAY SOFT AND WHITE WITH
SUNNY DAY SOAP

NEW *headlines* TO PUT PUNCH IN YOUR SOAP COPY

For a long time, putting punch in soap copy was just about as easy as putting romance in door-knobs. Then along came a new super soap improver called VICTOR TETRASODIUM PYROPHOSPHATE.

Today the leading three popular brands of powdered soap *all* contain TSPP . . . because TSPP helps sell soap. This fact has been conclusively proven by extensive consumer tests and surveys conducted by leading soap makers.

Mrs. American Housewife definitely prefers soap containing TSPP . . . for several good reasons. More suds from less soap, for one. A 20% to 30% saving in soap because of powerful water-softening action, for another. Cleaner, whiter rinsing clothes, for a third (unique "peptizing" action suspends dirt particles throughout the washing solution . . . prevents them from becoming enmeshed in the fabric).

Today, there's news in soap . . . news that packs a real "wallop." Why not capitalize on it while it's still "front page"?

Send for Research Bulletin
"The Function of Tetrasodium Pyrophosphate in Soap Mixtures"

VICTOR CHEMICAL WORKS
141 W. JACKSON BLVD. CHICAGO, ILL.

TETRASODIUM PYROPHOSPHATE . . BY . .

VICTOR

HEADQUARTERS FOR . . .
pHosphates

Cosmeticians, Barbers Meet in Annual Convention in Chicago

CONVENTIONS of cosmeticians and barbers in Chicago last month brought together representatives of two important groups who annually consume a large volume of soap and soap products. At the American Cosmeticians National Association meeting, Sept. 9 to 11, at the Hotel Sherman, 11 manufacturers or jobbers occupied booths for display of their lines. Six of these transferred their exhibits to the Stevens Hotel for the meeting of the Beauty and Barber Supply Institute the following week. Eight other manufacturers joined them there, making a total of 19 soap firms using the two big meetings for promotional work.

Rap-I-Dol, Inc., New York and Chicago, displayed at the Cosmeticians show a novelty container for their liquid shampoo in the form of an individual collapsible tube containing a quantity sufficient for one application. Margo Leonard, technical supervisor for the company, stated that this is the only shampoo available on the market in this form of packaging. Rap-I-Dol, Inc., also distribute their shampoo in one-gallon glass jugs.

Raymond Laboratories, St. Paul, Minn., displayed "Ray Fluff" shampoo soap in paste form for use with their machineless permanent wave method. Dorman L. Duncan, Chicago sales manager, was in charge at the booth.

Laco Products Co., Baltimore, had an exhibit of their "Laco Hi-Lather" shampoo, with C. O. Young, sales manager, in charge.

F. W. Fitch Co., Des Moines, Ia., had a corps of six demonstrators on hand to promote their widely advertised shampoo. M. E. Parobek, director of the educational department, and Frank Baird, hair stylist for the company, supervised the presentation.

Bailey's Beautician Supply Co., Chicago and Indianapolis, included in their varied line displays of "Admiracion" shampoo from the Admiracion Laboratories, Harrison, N. J., and "Odell's" shampoo, from the Odell Co., Newark, N. J.

Rilling-Arnao Co., Minneapolis, featured "Rillene," a pre-permanent shampoo, with Lester Anderson, sales manager, in charge.

Procter & Gamble Co., Cincinnati, emphasized "Drene" shampoo with demonstrations by hair dressers. Literature distributed to visitors showed by means of photomicrographs the effects of "Drene" on the hair as contrasted to soap and oil shampoos.

Ben-Cole Laboratories, Chicago, promoted their new "Four Aces" shampoo and their "Gro-Tex" medicated shampoo. Bernard Benjamin, president and general manager, was in charge.

Boyer Laboratories, Chicago, had a large display of complexion soaps, germicidal soaps, French soaps and liquid shampoo soaps, sold under their own brand names and also packaged with customers' private labels. L. Clement, sales manager, headed a large staff of sales representatives.

Two manufacturers of water softeners also displayed their products to the cosmeticians, Magic Mfg. Co., Chicago, maker of "Magic Bath" tablets and A. W. Gartner Co., Chicago, with "Beauty Bubbles" in liquid form.

At the Beauty and Barber Supply Institute in the Stevens Hotel, Sept. 16 to 20, "repeat performances" were staged by the F. W. Fitch Co., Procter & Gamble, Raymond Laboratories, Rilling-Arnao Co., Rap-I-Dol, Inc., and Laco Products Co. Other exhibitors of soap products for the barber trade included Amole Soap Co., Buno Co., Colgate-Palmolive-Peet Co., Conti Products Co., Davies-Young Soap Co., Lightfoot Schultz Co., Paul Westphal, Inc. and J. B. Williams Co. Strict application of a rule barring all but Institute members from the exhibition hall prevented development of details about products and personalities in these different displays.

◆

Mich. Prison Soap Production

The soap factory operated at the Michigan reformatory, Ionia, Mich., produced soap valued at $39,923 during the fiscal year ended June 30, 1940, it was reported recently. The soap was sold to state institutions. Operations at the plant, which originally made only soaps, have recently been expanded to include the manufacture of compounds and detergents.

◆

Introduce "Spicone" Odor

"Spicone," a spicy-floral perfume specialty recently introduced by Compagnie Parento, Inc., Croton-on-Hudson, N. Y., is said to have great solubility in both sulfonated and mineral oils as well as in alcohol-water and in isopropanol-water solutions. It is recommended by the manufacturer as a perfume material for use in shampoos and hair preparations.

◆

Cunningham Joins Columbia

Dr. G. L. Cunningham, research chemist at Mathieson Alkali Works, Inc., Niagara Falls, since 1930, has recently joined the technical service department of Columbia Alkali Corp., chemical sales division of Pittsburgh Plate Glass Co. Prior to 1930, he served as laboratory assistant at the University of South Carolina and taught chemistry at the University of Virginia.

◆

Jergens Expands Plant

Andrew Jergens Co., has awarded a contract for construction of a two-story top addition to its present one-story and basement plant at 99 South Verdugo Street, Burbank, Cal. The addition will have dimensions of 67 x 65 feet and will be constructed of steel and reinforced concrete at a cost of $25,000.

THIS BOGYMAN'LL GET YOU IF YOU DON'T WATCH OUT!

BAD ODOR is no imaginary spectre. It's a very real menace and as long as you tolerate its presence, it'll drive away your prospects and deprive you of sales. But there's one sure way to rid your product of the Bad Odor Bogyman and that is to treat it with NEUTROLEUM. This powerful aromatic makes quick dispatch of most repellent odors. Hundreds of different technical products—fly sprays, insecticides, para blocks, polishes, naphthalene cleansers, solvents, diluents, waxes and others too numerous to mention—are being made more salable and more profitable by its use. It does its job quickly, effectively and most economically. In fact, its added expense is too slight a factor to figure in its cost.

Therefore, if your product is on the strongly or even slightly odorous side, let us demonstrate what NEUTROLEUM can do to relieve it of this handicap. You will incur no obligation or expense, but you may discover a new and effective aid for odor-stymied sales.

FRITZSCHE BROTHERS, Inc.

PORT AUTHORITY COMMERCE BLDG., 76 NINTH AVENUE, NEW YORK, N. Y.

BRANCH STOCKS

BOSTON CHICAGO LOS ANGELES ST. LOUIS TORONTO, CANADA MEXICO, D. F.

FACTORIES AT CLIFTON, N. J. AND SEILLANS (VAR) FRANCE

NEUTROLEUM

completely and permanently deodorizes all technical mixtures based upon petroleum distillates. In so doing it permits reduction of from 40 to 70 per cent of the perfume subsequently used for aromatization. From 10 to 12 pounds of NEUTROLEUM will completely deodorize 8000 gallons of petroleum distillate.

A FRITZSCHE PRODUCT for EVERY PURPOSE . . .

ESSENTIAL OILS . . . The FRITZSCHE label on your Essential Oil container is an absolute guarantee of purity and complete conformity to the highest standards. These basic materials are the finest that modern methods and experience can produce.

AROMATIC CHEMICALS . . . For finer aromatic effects and greater economy, choose your chemical requirements from this large and superlative selection of materials.

FIXATIVES . . . Timely now are our four Artificial Animal Scents—Musk, Civet, Castoreum and Ambergris, all especially adaptable to soap making. Our complete line includes, also, Rose Crystals —one of the best fixatives for all-around use.

ANTI-OXIDANTS . . . Developed for the preservation of soaps, animal and vegetable fats and oils, these materials are highly important to the soap manufacturer. Write us for details concerning Oxidex.

BATH SALT PERFUMES . . . These materials, combining both perfume and color, greatly facilitate the process of manufacture. Write for circular describing our Bath Perstels and giving complete list of perfume-color blends.

INSECTICIDES AND DISINFECTANTS . . . Some of our most important research achievements have been in this field of investigation. All materials listed in our catalog and recommended for these purposes have behind them guarantees of experience and the indisputable tests of time.

DEODORIZING COMPOUNDS . . . See our advertisement on page opposite. Besides Neutroleum, we recommend Javoilal, Methalate "C," Safrella and others. Write for descriptive circulars.

TOILET SOAP COMPOUNDS . . . Many new and important toilet soap perfumes have been added to our already extensive line. These provide exquisite odor quality at very low cost. Ask us for particulars.

LIQUID SOAP AND SHAMPOO PERFUMES . . . Being highly soluble and mixing readily with liquid soaps, these special perfume blends are easy to use and low in cost.

DENTAL AND ORAL FLAVORS . . . These flavoring specialties are skilliully blended to produce pleasant, clean, refreshing taste effects. We are prepared, also, to create flavor blends to meet your own specifications and costs. Please feel free to consult us.

SEND FOR **SAMPLES**

FRITZSCHE BROTHERS, Inc.

PORT AUTHORITY COMMERCE BLDG., 76 NINTH AVENUE, NEW YORK, N. Y.

BRANCH STOCKS

BOSTON CHICAGO LOS ANGELES ST. LOUIS TORONTO, CANADA MEXICO, D. F.

FACTORIES AT CLIFTON, N. J. AND SEILLANS (VAR) FRANCE

Soap and Perfume Book

A new book under the title "Perfumes and Spices," which contains several chapters on soaps has just been published by L. C. Page & Co., Boston, the author being A. H. Verrill. The treatment is general and non-technical in style, for public consumption rather than for the soap maker. In the soap chapters the history of soap is reviewed briefly and the reader is acquainted with the common raw materials and methods of manufacture used in soap making. A few minor errors of the type ordinarily to be expected in books of this type will be obvious to the experienced soap maker, but in the main this popular treatise fulfills its purpose very well. 6 x 9. 300 pages. $3.00.

Elect Crookes N.E.T.G.A. Head

W. D. Crookes, Lentheric, Inc., was recently elected president of the New England Toilet Goods Association for the coming year. Other officers are as follows: E. Mannings, DeVilbiss Co., vice-president; Maurice Schaffer, secretary-treasurer; board of governers, R. S. Beck, John Bradshaw Co.; R. C. Buckley, Buckley Sales; E. C. Bullock, Maurice Levy; Charles Higbee, Chevralier Garde; Joseph Manning, Allen B. Wrisley Distributing Co.; J. J. O'Hearn, Ferd Mulhens; J. L. Wood, Roger & Gallet.

C-P-P Mgr. Aids Charity Drive

Thomas H. Riley, New England district manager of Colgate-Palmolive-Peet Co., was recently named chairman of the soap group of the Greater Boston Annual Maintenance Appeal of the Salvation Army. The working group will be formed immediately as the campaign is to be started October 7th.

Millmaster Engages Fisher

J. Robert Fisher was recently appointed manager of specialty products for Millmaster Chemical Co., New York. Mr. Fisher was formerly connected with National Aniline & Chemical Co., subsidiary of Allied Chemical & Dye Corp.

U.S.I. ALCOHOL NEWS

October ★ A Monthly Review of Technical Developments for Chemists and Executives ★ 1940

SUPER-PYRO ANTI-FREEZE SUPERIOR

Tests Show It Surpasses Methanol

Since exhaustive tests made by an impartial laboratory prove that methanol anti-freeze loses its protection at a much faster rate than Super PYRO, U.S.I. for the 1940-41 winter season recommends that motorists use its Super PYRO anti-freeze for better and more economical protection.

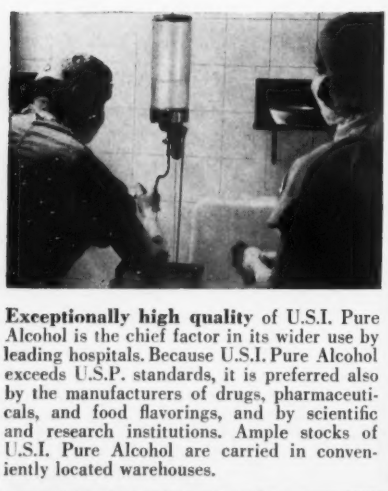
Retailing for $1 a gallon, Super PYRO is advertised to protect most cars in most climates for the entire season at a total cost of $1.50. For example, a 1940 Buick with 3½-gallon radiator capacity at —10° F. would require 1½ gallons of Super PYRO costing $1.50. Most cars have thermostatically controlled cooling systems; therefore very little, if any, replacement has to be made during the winter.

According to a certified report of an independent research organization, ". . . the rate of anti-freeze protection loss is 2.6 times faster with methanol than with Super PYRO . . ." After repeated hourly observations, under conditions duplicating those of a cooling system, with the engine shut off and the temperature rising to 180° F., 22.2 milliliters of methanol had distilled off, but only 8 milliliters of Super PYRO. It was found, too, that the freezing point of Super PYRO was lower than that of methanol, also that even with only 7% mixture of Super PYRO no solid freeze can occur in the cooling system to cause costly and dangerous failures.

Thousands of billboards reaching 16,000,000 motorists in over 500 cities and towns will be employed this fall to advertise the "No Boil-Away" feature of Super PYRO.

Tests conducted by an independent laboratory indicate clearly the superiority of Super PYRO. It was found that the rate of anti-freeze protection loss is 260% faster with methanol than with Super PYRO. Super PYRO offers the motorist better, more economical protection.

U.S.I. PURE ALCOHOL CHOSEN BY MANY LEADING HOSPITALS



Exceptionally high quality of U.S.I. Pure Alcohol is the chief factor in its wider use by leading hospitals. Because U.S.I. Pure Alcohol exceeds U.S.P. standards, it is preferred also by the manufacturers of drugs, pharmaceuticals, and food flavorings, and by scientific and research institutions. Ample stocks of U.S.I. Pure Alcohol are carried in conveniently located warehouses.

TECHNICAL DEVELOPMENTS

For further information write U.S.I.

A perfume oil has a floral-spicy fragrance, dissolves readily in mineral and sulfonated oils and in alcohol-water mixtures, is useful in hair preparations and many cosmetic preparations, according to the maker. **(No. 380a)**

A heavy permanent waving oil is said to penetrate readily and produce tight curls of high luster. Available also in heavy cream form suitable for packaging in tubes, it is reported. **(No. 381a)**

Alcohol odor in perfumes and toilet waters is removed by a new product without affecting the fragrance of the perfume oils used, it is claimed. **(No. 382a)**

A synthetic wax is described as self-emulsifying in alkaline, acid, and neutral mediums, stable in the presence of many acids and a number of electrolytes, such as aluminum sulphate. **(No. 383a)**

A bergamot substitute is said to duplicate the odor of the natural product very closely, to have a higher odor value on a pound basis, and to be suitable for partial or complete replacement. **(No. 384a)**

A filling machine is reported to handle liquids, semi-liquids, and pastes in unit capacities ranging from 2 ounces to 5 gallons. **(No. 385a)**

White neoprene gloves are said to be especially suitable for use in the cosmetic, pharmaceutical, and food industries. Maker says that they resist deterioration by oils, fats, greases, and acids. **(No. 386a)**

A vegetable stearic acid is said to be very pure, edible, suitable for use in drugs, cosmetics, foods. **(No. 387a)**

ASTRINGENCY OF ALCOHOL USEFUL IN AFTER-SHAVES

Astringent properties necessary in after-shave lotions are easily obtained by the use of alcohol. At the same time, alcohol contributes antiseptic properties, acts as a solvent for other ingredients, and by its rapid rate of evaporation produces a desirable cooling effect.

U.S.I. INDUSTRIAL CHEMICALS, INC.
60 EAST 42ND ST., NEW YORK (USI) BRANCHES IN ALL PRINCIPAL CITIES
INDUSTRIAL ALCOHOL IN ALL GRADES AND ALL FORMULAS

Contracts Awarded

Soap Awards

The following contracts were recently awarded under the Walsh-Healey Act: Armour & Co. of Del., Chicago, Navy Department, S. & A., soap powder valued at $54,079.95; Colgate - Palmolive - Peet Co., Jersey City, N. J., War Department, C.C.C., laundry soap valued at $10,010.

Floor Wax Bid

Windsor Wax Co., New York, submitted the low bid of 47.9 cents a gallon on 550 gallons of floor wax in a recent opening by the procurement division, Treasury Department, Washington, D. C.

Scouring Compound Bid

Stephens Soap Corp., Brooklyn, N. Y., bid low on 90,000 pounds of scouring compound powder at 1.108 cents a pound in a recent opening by the procurement division, Treasury Department, Washington, D. C.

Automobile Soap Bid

Armour & Co. of Del., Chicago, was low bidder on 20,000 pounds of automobile soap at 4.23 cents in a recent opening by the procurement division, Treasury Department, Washington, D. C.

Disinfectant Bid

Sherwin - Williams Co., New York, entered the low bid of $929 on 2,750 gallons of cresylic disinfectant in a recent opening by the procurement division, Veterans Administration, Washington, D. C.

Green Soap Bid

Armour & Co. of Del., Chicago, submitted the low bid of $1,782 on 20,000 pounds of green soap in a recent opening by the procurement division, Veterans Administration, Washington, D. C.

Floor Sealer Bid

Baltimore Paint & Color Works, Baltimore, bid low on 1,500 gallons of floor sealer at 48 cents in a recent opening by the Post Office Department, Washington, D. C.

Soap Powder Award

Colgate - Palmolive - Peet Co., Berkeley, Cal., was awarded a contract for soap powder valued at $35,444.25 in a recent opening by the Navy Department, S. & A., under the Walsh-Healey Act.

Panama Canal Supplies Bids

In a recent opening for the Panama Canal, Washington, D. C., the following low bids were submitted: Stevens Soap Corp., Brooklyn, 10,000 pounds trisodium phosphate, $435, and 40,000 pounds soap powder, $1,080; Newell - Gutradt Co., San Francisco, 2,000 pounds grit soap, $82.80, and 7,500 pounds toilet soap, $442.50; Procter & Gamble Distributing Co., Baltimore, 18,750 pounds laundry soap, $575.63; Colgate-Palmolive-Peet Co., Jersey City, 9,000 pounds salt water soap, $207; Armour & Co., Chicago, 1,250 pounds toilet soap, $100.

Soap Bid

Manhattan Soap Co., New York, entered the low bid of 6.84 cents on 11,250 pounds soap in a recent opening by the procurement division, Treasury Department, Washington, D. C.

Disinfectant Bid

Crystal Soap & Chemical Co., Philadelphia, submitted the low bid of 45.8 cents on 300 gallons of disinfectants in a recent opening by the procurement division, Treasury Department, Washington, D. C.

Powder Soap Bid

Stevens Soap Corp., Brooklyn, was low bidder on 7,840 pounds powder soap at 2.1 cents in a recent opening by the procurement division, Treasury Department, Washington, D. C.

Termicide Award

Modern Fumigation Co., Columbus, Ga., was awarded the contract for 150 gallons chemical termite control termicide at $2 a gallon in a recent opening by the Army Quartermaster, Ft. Benning, Ga.

Army Supply Awards

In a recent opening by the Army Quartermaster, Ft. Sam Houston, Texas, the following contracts were awarded: Thompson-Hayward Chemical Co., San Antonio, Texas, 76,050 pounds trisodium phosphate at 3.15 cents; Day & Frick, Philadelphia, 37,500 cakes soap at 2.8 cents; Procter & Gamble Distributing Co., Dallas, 7,600 cakes soap at 1.5 cents.

Laundry Soap Award

John T. Stanley Co., New York, was awarded the contract for laundry soap valued at $32,880 in a recent opening by the Quartermaster Corps, War Department under the Walsh-Healey Act.

Metal Polish Award

R. M. Hollingshead Corp., Camden, was awarded the contract for metal polish valued at $96,935.88 in a recent opening by the Navy Department, S. & A., under the Walsh-Healey Act.

Hard Soap Bid

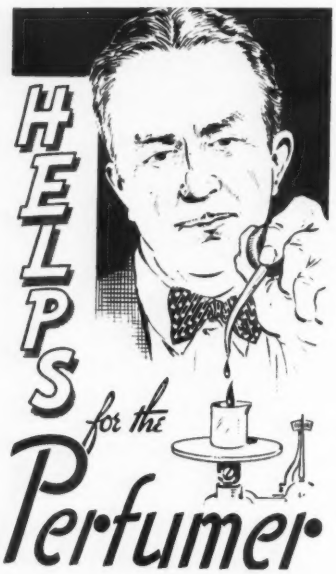
Industrial Distributors, New York, submitted the low bid of $84.96, f.o.b., on 48 cartons hard soap in a recent opening by the procurement division, Veterans Administration, Washington, D. C.

Glycerine Bids

Conray Products Co., New York, entered the low bids on glycerine in a recent opening by the procurement division, Veterans Administration, Washington, D. C.: 12,000 pounds, $1.668, and 10,000 pounds, $1.390.

(*Turn to Page* 123)

DREYER



With certain essential oils in very scarce positions and prices on many goods at high levels we offer substitutes which even the most exacting perfumers will find may be used in whole or in part to replace the natural product.

•

BERGAMOL..... **$2.25 lb.**
A Perfected Artificial Bergamot

•

HELIOTROPINE SUBSTITUTE, $2.60 lb.
Liquid Form—Will Not Discolor

•

GERANIUM ARTIFICIAL..... **$1.50 lb.**
Very True to Natural Odor

•

CIVET SYNTHETIC POWDER, $12.50 lb.
Economical—Powerful True Effect

•

YLANG SUBSTITUTE..... **$4.00 lb.**
Delicacy and Fidelity to Type

•

WRITE FOR TRIAL QUANTITY

P. R. DREYER Inc.

119 WEST 19TH ST., NEW YORK, N. Y.

CHICAGO LOS ANGELES

BOOKS

Modern Soap Making, by Dr. E. G. Thomssen and C. R. Kemp. The first entirely original American book on soap manufacture in several years. Thoroughly covers every phase of soap manufacture and glycerin recovery. Written by practical soap men....a truly practical book. Chapter headings: Raw Materials; Machinery and Equipment; Soap Making Methods; Soap Products; Glycerin Recovery and Refining; Analytical Methods; Appendix with reference tables, etc. 540 pages. $7.50 per copy in U. S. Add 50 cents for foreign postage.

Henley's Twentieth Century Book of Recipes, Formulas and Processes. A handy reference book listing 10,000 miscellaneous formulas, including special sections for soaps, polishes, insecticides, etc. 800 pages, $4.00.

The Industrial Chemistry of Fats and Waxes, by Hilditch. A study of the fats and waxes in relation to their use in industry. 450 pages, $7.50.

Hydrogenation of Organic Substances, by Ellis. 1930 revised edition of this well-known book, pre-eminent in the field of hydrogenation. 990 pages, $15.00.

Laundry Chemistry, by A. Harvey. A manual on the chemistry of laundry materials and methods. 120 pages, 5 x 7½, $1.75.

Pyrethrum Flowers, by Gnadinger. A complete compilation of all known facts on pyrethrum; its history, sources, evaluation, chemistry and uses. The problems involved in the manufacture of pyrethrum products are given thorough and lucid exposition. 396 pages, $5.00.

"Soap." Bound volumes for years 1927-28, and 1937 available at $12.00 each.

Blue Book. A Buyer's Guide, Catalogue and Business and Technical Reference Book. 210 pages, $1.00.

Vegetable Fats and Oils, by George S. Jamieson. 444 pages. An American Chemical Society Monograph. Covering classification, occurrence, properties, analytical methods, etc., of vegetable oils, fatty acid and other derivatives; also production and refining methods. $6.50.

Chemistry of Laundry Materials, by D. N. Jackman. A useful book for the laundry operator, containing valuable information on the chemistry of laundry materials. Discusses alkalies, soaps, bleaches, starches, also the newer detergents, synthetic soaps, etc. 230 pages, $2.50.

Modern Cosmetics, by Francis Chilson. Second edition with complete revision of text, addition of many new chapters, tested and revised new formulas, $6.00.

Owing to the large numbers of books supplied it is impossible to open accounts on individual book orders or to supply books on approval. Please send check with order.

MAC NAIR-DORLAND CO.
254 West 31st Street, NEW YORK CITY

New Trade Marks

The following trade-marks were published in the September issues of the *Official Gazette* of the United States Patent Office in compliance with Section 6 of the Act of September 20, 1905, as amended March 2, 1907. Notice of opposition must be filed within thirty days of publication. As provided by Section 14, fee of ten dollars must accompany each notice of opposition.

Trade Marks Filed

SHULIFE—This in outline letters describing shoe polish. Filed by R. M. Hollingshead Corp., Camden, N. J., Nov. 27, 1939. Claims use since Jan. 5, 1939.

ZONED SOAP—This in reverse letters under outlined cross and fancy border describing powdered soap. Filed by Max Finger, U. & S. Zoned Soap Co., Fort Wayne, Ind., Feb. 6, 1940. Claims use since Nov. 1938.

FLEET—This in outline letters describing washing powder and cleaner. Filed by Earnest J. Rurup, Los Angeles, April 3, 1940. Claims use since Nov. 22, 1939.

PRITZ—This in solid letters on ribbon describing dirt remover. Filed by Lillian Pritzert, New York, April 10, 1940. Claims use since July 10, 1939.

DRISORBENE — This in solid letters describing cleanser. Filed by Bigelow-Sandford Carpet Co., Thompsonville, Conn., May 6, 1940. Claims use since Feb. 26, 1940.

TRANCENE—This in fancy letters describing household cleaner. Filed by Catherine I. Burns, Riverview Chemical Co., St. Louis, June 12, 1940. Claims use since March 28, 1940.

YRAM—This in solid letters describing soap. Filed by Mary Chess, Inc., New York, June, 14, 1940. Claims use since June 1, 1934.

CHIPSO—This in solid letters describing soap flakes and granules. Filed by Procter & Gamble Co., Cincinnati, June 26, 1940. Claims use since Sept. 17, 1920.

LAVA GENIE—This reverse letters over representation of genii emerging from washing machine. Filed by Elizabeth H. Granville, Lavagene Laboratories, San Gabriel, Cal., March 19, 1940. Claims use since Dec. 1, 1939.

DANUBIO — This in stenciled letters describing soap. Filed by Miller Soap Products, Inc., Los Angeles, April 27, 1940. Claims use since Feb. 21, 1939.

LEON—This in stenciled letters describing soap. Filed by Miller Soap Products, Inc., Los Angeles, April 27, 1940. Claims use since Feb. 21, 1939.

FINALE—This in fancy letters over drawing of shoes describing shoe polish. Filed by George C. Finley, Finale Products, St. Louis, May 20, 1940. Claims use since Jan. 8, 1940.

FIBRE-TEX—This in script letters describing floor cleaning compound. Filed by Rodger F. Becker, Fibre-Tex Mfg. Co., Kalamazoo, Mich., June 20, 1940. Claims use since Aug. 1, 1937.

DOUBLE R—This in solid letters describing cleaning compound. Filed by Harvey E. Brown, Rollins & Rice, Aurora, Ill., July 5, 1940. Claims use since June 1, 1935.

TINE—This in solid letters describing germicide. Filed by Fred R. Wallich, Wallich Laboratories, Los Angeles, May 29, 1940. Claims use since May, 1938.

ANTROL—This in solid letters describing insecticides. Filed by A. S. Boyle Co., Jersey City, N. J., June 20, 1940. Claims use since July 31, 1922.

RO-TONE—This in solid letters describing insecticides. Filed by Lucas Kil-Tone Co., Philadelphia, June 25, 1940. Claims use since May 21, 1934.

CISCO SOLVENT—This in solid letters describing crankcase cleaner. Filed by Cities Service Oil Co., Bartlesville, Okla., July 1, 1940. Claims use since April 10, 1940.

TIK—This in solid letters describing paste shampoo. Filed by Davies-Young Soap Co., Dayton, July 20, 1940. Claims use since July 12, 1940.

"C. T."—This in solid letters describing disinfectant. Filed by Merck & Co., Rahway, N. J., July 20, 1940. Claims use since July 10, 1940.

VIS-KO—This in outline letters describing insecticides. Filed by Henry J. Reynolds, Reynolds Spray Co., Sumner, Wash., July 25, 1940. Claims use since July 15, 1938.

DISSOLVO—This in solid letters describing cleaning compounds. Filed by E. I. du Pont de Nemours & Co., Wilmington, Del., June 13, 1940. Claims use since March 29, 1940.

BEST-FLEX—This in solid letters describing shoe polish. Filed by Best & Co., New York, June 20, 1940. Claims use since June 14, 1940.

PRINCESS NADJI—This in fancy letters under silhouette of woman describing toilet soap. Filed by Los Angeles Soap Co., White King Soap Co., Los Angeles, July 15, 1940. Claims use since Nov. 26, 1934.

BUOYANT BATH—This in script letters on drawing of flower bouquet describing bath preparation. Filed by Charm Products, Inc., Carlyle, Los Angeles, April 19, 1940. Claims use since April 24, 1939.

ZELLE—This in solid letters describing liquid dentifrice. Filed by Clark - Cleveland, Inc., Binghamton, N. Y., July 9, 1940. Claims use since June 23, 1940.

NU-LEAF—This in solid letters describing parasiticides. Filed by California Spray - Chemical Corp., Richmond, Cal., July 11, 1940. Claims use since July 1, 1940.

WILSONITE—This in solid letters describing insecticides. Filed by Andrew Wilson, Inc., Springfield, N. J., July 1, 1940. Claims use since April 8, 1930.

CALFAST — This in stenciled letters describing insecticides. Filed by General Chemical Co., New York, Aug. 1, 1940. Claims use since July 15, 1940.

KLENZCRAFT — This in fancy letters describing floor wax. Filed by United Buyers Corp., Foodcraft Products, Chicago, July 5, 1940. Claims use since Feb. 10, 1937.

"D & O"

a dependable source of supply

The resources of the "D & O" organization have enabled us to take care of the requirements of our customers to an exceptional degree in these troubled times. Our factory and laboratories are well equipped to work with you. We invite your inquiries on any service we may be able to perform. We still have stocks available of many of the important raw materials.

DODGE & OLCOTT COMPANY

180 Varick Street — New York, N. Y.

BOSTON : CHICAGO : PHILADELPHIA : ST. LOUIS : LOS ANGELES

Plant and Laboratories . . . . Bayonne, N. J.

D&O

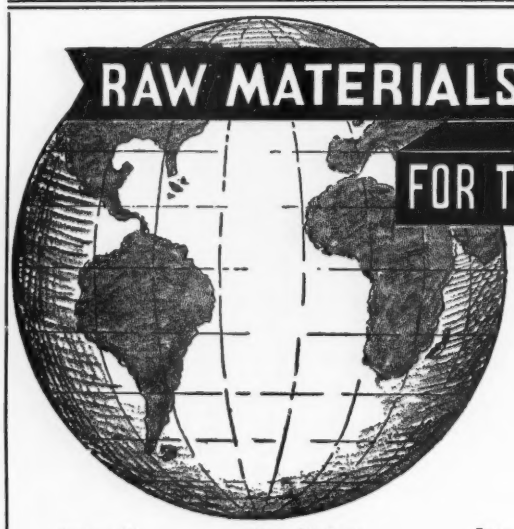
ESTABLISHED IN 1798

RAW MATERIALS 1838-1940

FOR THE SOAP INDUSTRY

Oils Fats
Chemicals
Fatty Acids
White Mineral Oils
Petrolatums

FROM ALL PARTS OF THE WORLD



Mineral Oils — Petrolatums

Fatty Alcohols — Special Fatty Acids

Castor Oil	Olive Oil Foots	Fatty Acids	Grease	Modified Soda
Cocoanut Oil	Peanut Oil	Lard Oils	Lanolin	Silicate Soda
Corn Oil	Perilla Oil	Neatsfoot Oil	Caustic Soda	Metasilicate
Cottonseed Oil	Rapeseed Oil	Oleo Stearine	Soda Ash	Tri Sodium Phosphate
Palm Oil	Sesame Oil	Stearic Acid	Caustic Potash	Di Sodium Phosphate
Palm Kernel Oil	Soya Bean Oil	White Olein	Carbonate Potash	Chlorphyll
Olive Oil	Teaseed Oil	Tallow	Sal Soda	Superfatting Agent

WELCH, HOLME & CLARK CO., Inc.

563 GREENWICH STREET — ESTABLISHED 1838 — NEW YORK CITY

GLAS-STYK—This in solid letters describing glass cleaning powder. Filed by Leonard J. Kurtz, Cleveland, July 12, 1939. Claims use since June 24, 1939.

WHITENIZE — This in outline letters on banner over drawing of tire describing white sidewall tire cleaner. Filed by Warner-Martin Corp., Boston, June 20, 1940. Claims use since Dec. 5, 1939.

TRUMPET—This in solid letters describing brushless shaving cream. Filed by Trumpet Co., Owensboro, Ky., July 31, 1940. Claims use since Nov. 21, 1939.

CEPACOL—This in solid letters describing mouth wash. Filed by Wm. S. Merrell Co., Cincinnati. May 24, 1940. Claims use since April 24, 1940.

PERMO RITE — This in solid letters describing odorless deodorizer. Filed by Elmer M. Depencier, Permorite Products Co., Los Angeles, July 15, 1940. Claims use since June 1, 1934.

DEX—This in solid letters describing disinfectant. Filed by Charles C. Corner, Dexco Products Co., Cleveland, July 25, 1940. Claims use since July 1, 1940.

TRIPLE KILL — This in solid letters describing insecticide. Filed by Corneli Seed Co., St. Louis, Aug. 7, 1940. Claims use since April 3, 1940.

Trade Marks Granted

380,547. Cleaning preparation. Howerton Gowen, Roanoke Rapids, N. C. Filed April 10, 1939. Serial No. 418,040. Published June 11, 1940. Class 4.

380,616. Soap flakes. Robert W. Burke, III, DSK Products Co., Philadelphia. Filed Mar. 6, 1940. Serial No. 429,246. Published June 11, 1940. Class 4.

380,648. Floor waxes. Mitsubishi Shoji Kaisha, Ltd., New York. Filed Mar. 26, 1940. Serial No. 429,990. Published June 18, 1940. Class 16.

380,676. Cleanser. Slater Products Co., Pittsburgh. Filed Apr. 6, 1940. Serial No. 430,464. Published June 18, 1940. Class 4.

380,682. Waterless cleanser. E. L. I. Products, Quincy, Mass. Filed Apr. 8, 1940. Serial No. 430,494. Published June 18, 1940. Class 4.

380,684. Shoe soap. Knomark Mfg. Co., Brooklyn, N. Y. Filed Apr. 8, 1940. Serial No. 430,511. Published June 18, 1940. Class 4.

380,688. Soapless soap powders. Alframine Corp., New York. Filed Apr. 9, 1940. Serial No. 430,535. Published June 11, 1940. Class 4.

380,703. Soaps. Brillo Mfg. Co., New York. Filed Apr. 12, 1940. Serial No. 430,671. Published June 11, 1940. Class 4.

380,704. Soaps. Brillo Mfg. Co., New York. Filed Apr. 12, 1940. Serial No. 430,672. Published June 11, 1940. Class 4.

380,705. Soaps. Brillo Mfg. Co., New York. Filed Apr. 12, 1940. Serial No. 430,673. Published June 11, 1940. Class 4.

380,706. Soaps. Brillo Mfg. Co., New York. Filed Apr. 12, 1940. Serial No. 430,674. Published June 11, 1940. Class 4.

380,707. Soaps. Brillo Mfg. Co., New York. Filed Apr. 12, 1940. Serial No. 430,675. Published June 11, 1940. Class 4.

380,715. Soap. Celanese Corp. of America, New York. Filed Apr. 13, 1940. Serial No. 430,723. Published June 11, 1940. Class 4.

380,735. Soapless cleaner. Naylee Chemical Co., Philadelphia. Filed Apr. 20, 1940. Serial No. 431,018. Published June 11, 1940. Class 4.

380,831. Soap. Allen B. Wrisley Co., Chicago. Filed Apr. 8, 1940. Serial No. 430,533. Published June 25, 1940. Class 4.

380,840. Shaving soap. John Hudson Moore, Inc., New York. Filed Apr. 15, 1940. Serial No. 430,789. Published June 25, 1940. Class 4.

380,867. Abrasive cleaning compound. Davies-Young Soap Co., Dayton. Filed Apr. 27, 1940. Serial No. 431,297. Published June 25, 1940. Class 4.

380,920. Drain cleanser. Hunter-Northcott Chemical Laboratories. Filed Jan. 19, 1939. Serial No. 414,998. Published Mar. 14, 1939. Class 6.

380,928. Insecticides. Llewellyn M. James, Insectonos Co., Bloomington, Ill. Filed Apr. 17, 1939. Serial No. 418,344. Published July 2, 1940. Class 6.

380,934. Deodorants. Vita Corp., Miami, Fla. Filed July 10, 1939. Serial No. 421,443. Published Sept. 19, 1939. Class 6.

380,970. Disinfectants. Woburn, Inc., Brooksville, Fla., and Harrison, N. J. Filed Mar. 5, 1940. Serial No. 429,237. Published June 18, 1940. Class 6.

380,981. Disinfectant. Doho Chemical Corp., New York. Filed Mar. 14, 1940. Serial No. 429,563. Published July 2, 1940. Class 6.

381,001. Insecticide and Fungicide. Andrew Wilson, Inc., Springfield, N. J. Filed Mar. 30, 1940. Serial No. 430,203. Published July 2, 1940. Class 6.

381,033. Drain pipe cleaner. United Buyers Corp., Foodcraft Products, Chicago. Filed Apr. 10, 1940. Serial No. 430,636. Published June 18, 1940. Class 6.

381,039. Insert spray. W. H. Barber Co., Minneapolis. Filed Apr. 13, 1940. Serial No. 430,716. Published June 25, 1940. Class 6.

381,042. Insecticides. J. Abramson & Sons, Brooklyn, N. Y. Filed Apr. 16, 1940. Serial No. 430,819. Published June 25, 1940. Class 6.

381,047. Insecticides. Derris, Inc., New York. Filed Apr. 17, 1940. Serial No. 430,862. Published June 18, 1940. Class 6.

381,059. Insect spray. W. H. Barber Co., Minneapolis. Filed Apr. 20, 1940. Serial No. 430,994. Published June 18, 1940. Class 6.

381,072. Insecticides. General Chemical Co., New York. Filed Apr. 23, 1940. Serial No. 431,110. Published June 25, 1940. Class 6.

381,074. Insecticides. Sherwin-Williams Co., Cleveland. Filed Apr. 24, 1940. Serial No. 431,116. Published June 25, 1940. Class 6.

381,094. Shampoo. Edward B. Cuddy, Hedy Products Co., New York. Filed May 1, 1940. Serial No. 431,442. Published July 2, 1940. Class 6.

Contract NOW for 1941!

ESPECIALLY under present-day conditions you will do well to look to a reliable, long established source for your INDUSTRIAL CHEMICALS.

What we and those who preceded us in this business have learned in almost a Century and a Quarter of dealing with these commodities and their application, may help you avoid costly errors and show you shorter cuts to the end desired.

You can rely—always—upon the uniformly high quality of products marketed under the ISCO Trade Mark.

ISCO TRINITY TALC—This ace California product has the good qualities you have always attributed to talc of European origin: fine white color, consistent purity and slip. Add assurance of continuous supply, prompt deliveries and fair price. A trial run will convince you.

NAPHTHALENE—Refined, prime white, freshly packed. Various forms and packages.

ISCO CAUSTIC POTASH—Liquid • Solid • Granular Flake • Broken.

ISCO CAUSTIC SODA—Liquid • Solid • Flake.

FOR YOUR CURRENT AND FUTURE NEEDS

ISCO GUMS AND WAXES—Imported by us and refined in our Jersey City plant. Available in exactly the grades needed for your purpose. We will match samples, or make suggestions if desired.

WAXES—Carnauba, Candelilla, Beeswax, Ceresines, Ozokerite.

GUMS—Arabic, Karaya, Locust Bean, Tragacanth.

INNIS, SPEIDEN & CO.
Established 1816
117-119 Liberty Street • • • NEW YORK
BOSTON • PHILADELPHIA • CHICAGO • CLEVELAND • GLOVERSVILLE, N. Y.
A National Institution

Crystal Clear

Soap manufacturers have proven the superior foam-making of Crosby rosins. You are assured absolute uniformity at all times with Crosby pale wood rosins—manufactured under the rigid technical control that has made Crosby products nationally prominent within 3 short years.

CALL ON CROSBY FOR QUALITY

Crosby Naval Stores, Inc.
Picayune, Miss.

Raw Material Markets

As of September 27, 1940

NEW YORK—Higher prices quoted this month on some fatty raw materials for the soaper reversed the downward price trend in those materials which extended over the preceding three or four months, tallow, greases, soybean oil, stearine and cottonseed oil prices all moving to higher levels. Most other oils and fats, however, either remained unchanged or dropped to fractionally lower market levels. The September review of the Fats & Oils Situation by the Bureau of Agricultural Economics indicates that domestic demand for soap fats is expected to be greater in the 1940-41 marketing season than in 1939-40 mainly as a result of increased industrial activity arising from the defense program. The review also predicts that lard and grease production in 1940-41 may be reduced as much as 10 per cent from the high 1939-40 levels because of the smaller pig crop this year. Present indications are for higher prices for the next year, particularly for tallow, greases, and lard, according to the Bureau. But increased production of soybean oil and other domestic vegetable oils, combined with large available supplies of foreign fats and oils and the loss of export markets, will probably tend to limit the price rise of these materials, it is said.

Carnauba wax quotations were again advanced on all grades. Pyrethrum extract prices continued to fall. Red squill prices continued to rise. Among the essential oils, with few exceptions, the price trend was downward. Crude glycerine prices were reduced. High and low grades of gum rosin were advanced while the medium grades were lower.

Animal Fats

Grease and inedible tallow prices are 3/8 to 1/2 cent a pound higher than they were a month ago. While demand strengthened somewhat this period, large buyers are still holding off in view of present world conditions.

Vegetable Oils

Changes in prices of vegetable oils used in soap making were, for the most part, slight this period, cottonseed oil, soybean oil and teaseed oil being fractionally higher than a month ago, and linseed oil, and vegetable oil fatty acids being quoted fractionally lower. Denatured olive oil prices were raised again this period, to a current level of $1.80 to $1.90 a gallon. The reopening of the trade route into the Mediterranean which was instituted recently raised the hope in some quarters that trading in Greek olive oil would be resumed. Tension between Italy and Greece, however, makes it doubtful whether cargoes of olive oil will reach the United States. Teaseed oil prices were advanced to 13 cents a pound this period, some sellers asking 13½ cents, with probable higher prices in the offing. The review of the Bureau of Agricultural Economics on the status of the Western Hemisphere in regard to sufficiency in soap fats shows that the hemisphere is deficient in production of coconut oil, palm oil, palm-kernel oil and babassu, but is practically self-sufficient so far as other important oils and fats needed in soap making are concerned.

Essential Oils

Spanish rosemary oil was reduced again in price this period and is currently quoted at a price range of 59 to 64 cents a pound in cans and 54 to 59 cents in drums. Orange oil, Italian, was advanced 25 cents a pound to the current price of $8.25, nominal. A 10-cent reduction in the price of pine needle oil early in the period brought it down to a range of $1.25 to $1.30 a pound. Patchouli was reduced 50 cents a pound to a range of $6.00 to $6.50. Citronella oil, Ceylon, was raised to a current range of 32 to 33 cents a pound, while the Java remained at 29 to 30 cents a pound. Some grades of lavender were advanced 25 cents a pound this period as all French floral oils continued to become increasingly scarce.

Waxes

Carnauba wax was advanced 7 to 10 cents a pound depending on grade, small arrivals from Brazil resulting in a comparative scarcity of spot stocks. Current prices are: No. 1, yellow, 72 to 74 cents a pound; No. 2, 61 to 62 cents a pound; No. 3, chalky, 57 to 59 cents a pound.

Insecticide Materials

Pyrethrum extract prices were shaded slightly during September, the 20 to 1 extract being quoted at $4.75 to $5.00 a gallon. Difficulty of obtaining red squill from sources in the Mediterranean necessitated another increase in squill prices. Powdered red squill (3 to 5 grain basis) is now quoted by most sellers at 90 cents to $1.20 a pound, nominal.

Felton Branch Moves

The Philadelphia branch office of Felton Chemical Co., Brooklyn, N. Y., has moved to new quarters at 15 Lombard Street. The office was formerly located at 200 South 12th Street.

Guiteras Joins F. D. Snell

Albert F. Guiteras joined the staff of Foster D. Snell, Inc., consulting chemists, on October 1. He had previously been with the New York City Health Department and the United States Department of Agriculture, Food and Drug Administration. Mr. Guiteras received his B.S. degree from Lafayette College and Ph.D. from Goettingen University.

SOAP PERFUMES

with that subtle, spicy note

are definitely on the march, judging by an ever widening public acceptance of certain toilet soaps.

We have developed, among others . . .

NEROLI RF at $3.00 lb.

which will impart to your own perfume creations a distinct character, plus exceptional lasting quality. Use from 10% up.

Investigate this quality product, offered at such a low price!

RIFA

RIFA-NEW YORK Inc.

Essential Oils • Aromatic Chemicals • Perfume Bases

153 Waverly Place New York, N. Y.

Chicago Office: 130 N. State St.

MUNN

M Wood Rosin

• MUNN is ordered by soap manufacturers to assure a Uniform output . . . with the economy of fixed formulae. MUNN is specified with the confidence of a doctor prescribing a drug by name . . . because the laws of science employed in the production of MUNN never change . . . any more than in the production of a drug.

• Uniformity and Cleanliness are absolute. Scientific control in Newport methods makes that a certainty. Specify MUNN and be sure.

NEWPORT INDUSTRIES, Inc.

230 PARK AVENUE NEW YORK, N. Y.

Raw Material Prices

(As of September 26, 1940)

Minimum Prices are for car lots and large quantities. Price range represents variation in quotations from different suppliers and for varying quantities

Chemicals

Acetone, C. P., drums	lb.	$ .06½	$ .07
Acid, Boric, bbls. 99½%	ton	96.00	128.00
Cresylic, drums	gal.	.68	.70
Low boiling grade	gal.	.68	.70
Muriatic, C. P., carboys	lb.	.08	—
Oxalic, bbls.	lb.	.10¾	.12
Adeps Lanae, hydrous, drums	lb.	.24½	.25
Anhydrous, drums	lb.	.26½	.27
Alcohol, Ethyl, U.S.P., bbls.	gal.	5.99½	6.06
Complete Denat., SD 1, drums, ex.	gal.	.28½	.33½
Alum. Potash lump, bbls.	lb.	.04	—
Ammonia Water, 26°, drums	lb.	.02¼	.02½
Ammonium Carbonate, tech., bbls.	lb.	.08	—
Bentonite, 1, works, 325 mesh	ton	16.00	—
Bentonite, 2, works, 200 mesh	ton	11.00	—
Bleaching Powder, drums	100 lb.	2.00	3.35
Borax, pd., cryst., bbls., kegs	ton	58.00	74.00
Carbon Tetrachloride, car lots	gal.	.66½	1.10
L. C. L.	gal.	.73	1.20
Caustic, see Soda Caustic, Potash Caustic			
China Clay, filler	ton	10.00	16.00
Cresol, U.S.P., drums	lb.	.09¾	.10¼
Creosote Oil	gal.	.13½	.14½
Feldspar, works (200 to 325 mesh)	ton	32.00	35.00
Formaldehyde, bbls.	lb.	.05½	.06
Fullers Earth	ton	15.00	—
Glycerine, C.P., drums	lb.	.12½	.13
Dynamite, drums	lb.	—	Nom.
Saponification, drums	lb.	.08⅛	.08¾
Soap, lye, drums	lb.	.07⅛	.07⅜
Hexalin, drums	lb.	.30	—
Lanolin, see Adeps Lanae.			
Lime, live, bbls.	per bbl.	—	2.45
Mercury Bichloride, kegs	lb.	2.24	2.39
Naphthalene, ref. flakes, bbls.	lb.	.07	.07¼
Nitrobenzene (Mirbane) drums	lb.	.08	.09
Paradichlorbenzene, drums	lb.	.11	.13½
Petrolatum, bbls. (as to color)	lb.	.02¾	.07½
Phenol (Carbolic Acid), drums	lb.	.13	.14¾
Pine Oils, bbls.	gal.	.50	.59
Potash, Caustic, solid	lb.	.06¼	.06¾
Flake, 88-92%	lb.	.07	.07½
Liquid, 45% basis	lb.	.03½	.03¾
Potassium Carbonate, solid	lb.	.06½	.06¾
Liquid	lb.	.03	.03⅛
Pumice Stone, powder	100 lb.	No Prices	
Rosins (net wt., ex yard, New York)—			
Grade D to H	100 lb.	2.10	2.18
Grade I to N	100 lb.	2.18	2.43
Grade WG to X	100 lb.	2.79	3.15
Wood, ex. dock	100 lb.	1.44	2.08
Rotten Stone, pwd., bbls.	lb.	—	—
Silica	ton	20.00	27.00
Soap, Mottled	lb.	.04⅛	.04½
Olive Castile, bars	lb.	.20	.35
Olive Castile, powder	lb.	.26	.36
Powdered White, Neutral	lb.	.18½	.20
Olive Oil Foot, bars, 68-70%	lb.	.09	—
Green, U.S.P.	lb.	.08	.09
Tallow Chips, 88%	lb.	.06⅛	.06¾
Soda Ash, cont., wks., bags, bbls.	100 lb.	1.10	1.35
Carlots, in bulk	100 lb.	.90	.95
Soda Caustic, cont., wks., solid	100 lb.	2.30	—
Flake	100 lb.	2.70	2.95
Liquid, tanks, 47-49%	100 lb.	1.95	—
Soda Sal., bbls.	100 lb.	1.10	1.30
Sodium Chloride (Salt)	ton	15.00	15.60
Sodium Fluoride, bbls.	lb.	.07	.08¼
Sodium Hydrosulfite, bbls.	lb.	.16	.17
Sodium Metasilicate, ground	100 lb.	3.75	4.80
Crystalline	100 lb.	2.35	3.35
Sodium Pyrophosphate	100 lb.	5.10	5.30
Sodium Silicate, 40 deg., drum	100 lb	.80	1.20
Drums, 52 deg. wks.	100 lb	1.40	1.80
Tar Acid Oils, 15-25%	gal.	.22	.27
Triethanolamine	lb.	.19	.20
Trisodium Phosphate, bags, bbls.	lb.	.0225	.0285
Zinc Oxide, lead free	lb.	.06½	.07¾

Oils — Fats — Greases

Babassu, tanks, futures	lb.	.05¾	Nom.
Castor, No. 1, bbls.	lb.	.11¼	.12
No. 3, bbls.	lb.	.10¾	.11½
Coconut (without excise tax)			
Manila, tanks, N. Y.	lb.	.02¾	—
Tanks, Pacific Coast, futures	lb.	.02¼	—
Copra, bulk, coast	lb.	.0140	—
Corn, tanks, Mills	lb.	.05¼	.05⅜
Cottonseed, crude, tanks, mill	lb.	.04⅝	Nom.
PSY, futures	lb.	.05¾	.05⅞
Fatty Acids—			
Corn Oil, tanks, Chicago	lb.	.08¼	.08½
Coconut Oil, tanks, Twitchell, Chi.	lb.	.09¼	.09½
Cotton Oil, tanks, Chicago	lb.	.07¾	.08
Settled soap stock, Chicago	lb.	.02⅝	.02¾
Boiled soap stock, 65%, Chi.	lb.	.03⅜	.03¾
Foots, 50%, Chicago	lb.	.01⅜	.01½
Red Oil, bbls., dist. or sapon.	lb.	.06¼	.07¼
Tanks	lb.	.05¾	—
Stearic Acid, saponif.			
Double pressed	lb.	.09¼	.10¼
Triple pressed	lb.	.12	.13
Greases, choice white, tanks, Chi.	lb.	.03¾	.04
Yellow	lb.	.03¼	.03½
Lard, city	lb.	.05	.05½
Linseed, raw, bbls.	lb.	.0830	.0930
Tanks, raw	lb.	.0770	.0790
Olive, denatured, bbls., N. Y.	gal.	1.80	1.90
Foots, bbls., N. Y.	lb.	.08½	.08¾
Palm, Sumatra, cif. New York, tanks	lb.	.02¼	Nom.
Palm, kernel, shipment	lb.	No Prices	
Soya Bean, domestic, tanks, crude	lb.	.04½	.04¾
Stearine, oleo, bbls.	lb.	.05½	Nom.
Tallow, special, f.o.b. plant	lb.	.03½	—
City, ex. loose, f.o.b. plant	lb.	.03⅝	—
Teaseed Oil, crude	lb.	.13	.13½
Whale, refined	lb.	.0910	Nom.

SHELL

CRESYLIC ACID

PETROLEUM ORIGIN

MAXIMUM GERMICIDAL ACTION—MINIMUM SKIN IRRITATION

DEPENDABLE SOURCE OF SUPPLY

For Details on Prices and Local Delivery, write

SHELL OIL COMPANY

INCORPORATED

50 WEST 50th STREET
NEW YORK, N. Y.

SHELL BUILDING
SAN FRANCISCO, CAL.

CRESYLIC ACID — FORMALDEHYDE

AROMATICS

Phenyl Ethyl Alcohol	Phenyl Ethyl Acetate
Methyl Acetophenone	Amyl Cinnamic Aldehyde
Acetophenone	Benzyl Acetate
Geranyl Acetate	Benzophenone
Yara Yara	Nerolin

For Soaps, Perfumes, Cosmetics, etc.

ASSOCIATED COMPANIES

KAY-FRIES CHEMICALS, INC.
NEW YORK, N. Y.

CHARLES TENNANT & CO. (CANADA) LTD.
TORONTO, CANADA

AMERICAN-BRITISH
CHEMICAL SUPPLIES, Inc.
180 MADISON AVE., NEW YORK

(As of September 26, 1940)

Essential Oils

Almond, Bitter, U.S.P.	lb.	$2.75	$3.00
Bitter, F.F.P.A.	lb.	3.00	3.25
Sweet, cans	lb.	.70	.75
Anise, cans, U.S.P.	lb.	.75	.80
Bay, cans	lb.	1.20	1.25
Bergamot, coppers	lb.	8.50	Nom.
Artificial	lb.	1.25	3.50
Birch Tar, rect., cans	lb.	.85	.90
Crude, dms.	lb.	.27	.28
Bois de Rose, Brazilian	lb.	1.55	1.60
Cayenne	lb.	1.70	1.80
Cade, cans	lb.	.37	.40
Cajeput, native, cans	lb.	.62	.72
Calamus, cans	lb.	8.25	8.50
Camphor, Sassy, drums	lb.	.28	.29
White, drums	lb.	.32	.33
Cananga, native, cans	lb.	1.60	1.65
Rectified, cans	lb.	2.00	2.35
Caraway Seed	lb.	5.00	Nom.
Cassia, Redistilled, U.S.P.	lb.	1.35	1.40
Cedar Leaf, cans	lb.	.90	.95
Cedar Wood, light, drums	lb.	.22	.25
Citronella, Java, drums	lb.	.29	.30
Citronella, Ceylon, drums	lb.	.32	.33
Clove, U.S.P., cans	lb.	1.15	1.20
Eucalyptus, Austl., U.S.P., cans	lb.	.70	.72
Fennel, U.S.P., cans	lb.	1.90	2.25
Geranium, African, cans	lb.	3.40	3.75
Bourbon, cans	lb.	3.35	3.75
Turkish	lb.	2.25	2.50
Hemlock, tins	lb.	1.00	1.25
Lavender, U.S.P., cans	lb.	3.50	3.75
Spike, Spanish, cans	lb.	1.10	1.15
Lemon, Ital., U.S.P.	lb.	4.75	Nom.
Cal.	lb.	3.10	3.25
Lemongrass, native, cans	lb.	.68	.70
Linaloe, Mex., cases	lb.	1.30	1.35
Nutmeg, U.S.P., cans	lb.	2.10	2.15
Orange, Sweet, W. Ind., cans	lb.	2.00	2.10
Italian cop	lb.	8.25	Nom.
Distilled	lb.	.90	—
California, expressed	lb.	2.00	—
Origanum, cans, tech.	lb.	1.05	1.45
Patchouli	lb.	6.00	6.50
Pennyroyal, dom.	lb.	3.00	Nom.
Imported	lb.	2.50	2.75
Peppermint, nat., cans	lb.	2.35	2.60
Redis, U.S.P., cans	lb.	2.60	2.85
Petitgrain, S. A., cans	lb.	1.40	1.55
Pine Needle, Siberian	lb.	1.25	1.30
Rosemary, Spanish, cans	lb.	.59	.64
drums	lb.	.54	.59
Sandalwood, E. Ind., U.S.P.	lb.	5.25	5.50
Sassafras, U.S.P.	lb.	1.15	1.20
Artificial, drums	lb.	.80	.81
Spearmint, U.S.P.	lb.	2.10	2.15
Thyme, red, U.S.P.	lb.	.80	1.75
White, U.S.P.	lb.	.95	1.95
Vetivert, Bourbon	lb.	5.50	5.75
Ylang Ylang, Bourbon	lb.	3.00	6.50

Aromatic Chemicals

Acetophenone, C. P.	lb.	$1.60	—
Amyl Cinnamic Aldehyde	lb.	1.70	$2.00
Anethol	lb.	1.10	1.15
Benzaldehyde, tech.	lb.	.45	.50
U.S.P.	lb.	.85	.95
Benzyl, Acetate	lb.	.44	.49
Alcohol	lb.	.63	.68
Citral	lb.	1.40	3.10
Citronellal	lb.	.75	.80
Citronellol	lb.	1.60	1.85
Citronellyl Acetate	lb.	4.00	7.00
Coumarin	lb.	2.75	3.00
Cymene, drums	gal.	.90	1.25
Diphenyl oxide	lb.	.50	.55
Eucalyptol, U.S.P.	lb.	.80	.85
Eugenol, U.S.P.	lb.	1.75	2.00
Geraniol, Domestic	lb.	.60	3.00
Imported	lb.	2.00	3.00
Geranyl Acetate	lb.	1.20	2.50
Heliotropin	lb.	3.00	3.20
Hydroxycitronellal	lb.	2.00	2.50
Indol, C. P.	lb.	32.00	34.00
Ionone	lb.	2.75	3.95
Iso-Eugenol	lb.	2.80	4.25
Linalool	lb.	2.10	3.30
Linalyl Acetate	lb.	1.75	3.00
Menthol	lb.	2.50	3.50
Methyl Acetophenone	lb.	2.50	3.00
Anthranilate	lb.	2.20	2.30
Paracresol	lb.	4.50	6.00
Salicylate, U.S.P.	lb.	.35	.37
Musk Ambrette	lb.	3.65	3.95
Ketone	lb.	3.70	4.10
Xylol	lb.	1.05	1.20
Phenylacetaldehyde Sp.	lb.	2.10	2.50
Phenylacetic Acid	lb.	1.75	3.00
Phenylethyl Alcohol	lb.	2.30	3.35
Rhodinol	lb.	5.50	10.90
Safrol	lb.	1.00	1.10
Terpineol, C. P., drs.	lb.	.25	—
Cans	lb.	.28	—
Terpinyl Acetate, 25 lb. cans	lb.	.82	.85
Thymol, U.S.P.	lb.	1.55	1.60
Vanillin, U.S.P.	lb.	2.50	2.75
Yara Yara	lb.	1.25	1.55

Insecticide Materials

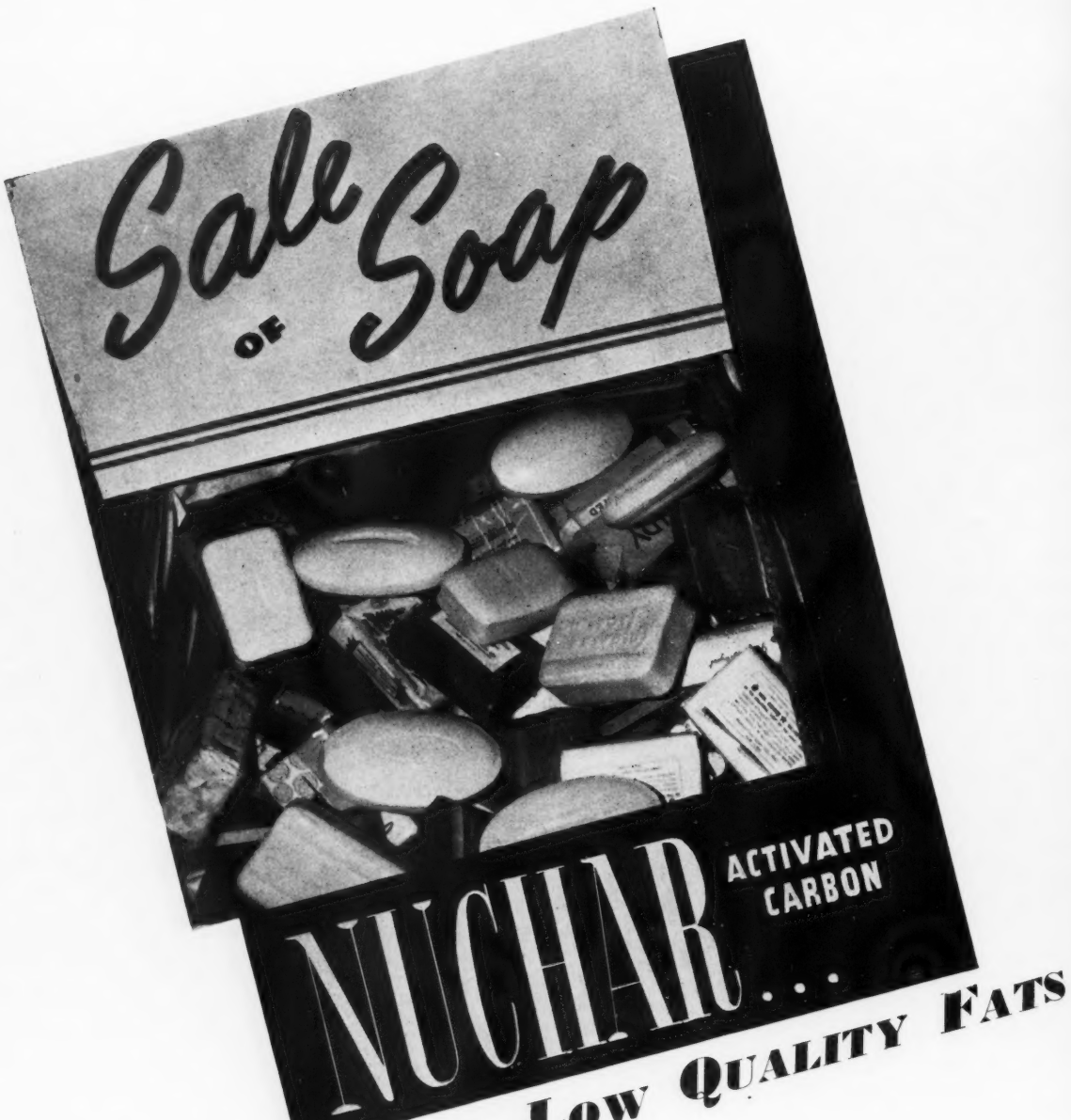
Insect Powder, bbls.	lb.	.23	.27
Pyrethrum Extract			
5 to 1	gal.	1.20	1.30
20 to 1	gal.	4.75	5.00
30 to 1	gal.	7.10	7.45
Derris, powder—4%	lb.	.17	.20
Derris, powder—5%	lb	.22	.26
Cube, powder—4%	lb.	.17	.22
Cube, powder—5%	lb.	.21	.26
Squill, dried (3 gr. basis)	lb.	.90	1.20
Phosphorus paste	lb.	.25	.62½

Gums

Arabic, Amb. Sts.	lb.	.14	.15
White, powdered	lb.	.18	.20
Karaya, powdered No. 1	lb.	.14	.33
Tragacanth, Aleppo, No. 1	lb.	3.50	3.75
Flake	lb.	No Prices	

Waxes

Bees, white	lb.	.35	.37
African, bgs.	lb.	.24½	.25½
Refined, yel.	lb.	.29	.31
Candelilla, bgs.	lb.	.18½	.19½
Carnauba, No. 1, yellow	lb.	.72	.74
No. 2, N. C.	lb.	.61	.62
No. 3, Chalky	lb.	.57	.59
Ceresin, yellow	lb.	.11	.14½
Paraffin, ref., 125-130	lb.	.0570	—



Besides finding wide acceptance in the bleaching of high grade tallows for fine soaps, manufacturers are now learning that NUCHAR GFO is a powerful adsorbent on "Low Quality Fats" and greases. By such treatment, the soap maker can improve the appearance and odor of the fat so that it can be used in the manufacture of a low grade toilet soap, where formerly it had to be used in the manufacture of laundry soap. Strangely enough, our research work has found that generally, the higher the free fatty acid of the fat the more effective NUCHAR GFO is when compared with other adsorbents.

NUCHAR

INDUSTRIAL CHEMICAL SALES

DIVISION WEST VIRGINIA PULP AND PAPER COMPANY

230 Park Avenue - New York City

CHICAGO
35 E. Wacker Drive

PHILADELPHIA
748 Public Ledger Bldg.

CLEVELAND
417 Schofield Bldg.

Production Section

A section of SOAP devoted to the technology of oils, fats, and soaps published prior to Jan. 1, 1932, as a separate magazine under the title, *Oil & Fat Industries.*

Soap Kettle Design

THE ideal soap plant arrangement in general is one in which the process of soap making from the melting out of the stock to the packing and shipping of the finished product moves downward from floor to floor, according to a view from India. Wrought steel kettles are best suited for boiling soap. Jacketed steam kettles have proved uneconomical from the thermal point of view as well as their high cost, and hence the kettles in use today are usually of the single-wall type, heated by open steam coils or an open steam ring. The use of a water separator in the feed line is advisable to prevent too much steam condensate from getting into the boiling soap. Boiler equipment will differ according to the kind of soap to be made. In producing a curd soap a jointed siphon pipe attached to the boiler jacket is required in addition to a drain pipe equipped with a clean-out to prevent clogging. A mechanical agitator driven by a motor is suitable to stir the soap.

The modern soap kettle is equipped with both closed and open coils so arranged as to distribute the heating surface uniformly over the bottom of the kettle. The closed coils usually continue some distance up the sides of the kettle. In addition to heating facilities the kettle should be equipped with drain-off pipes with valve, swing pipe, a scoop for drawing off the finished soap, and a water sprinkler.

The kettle should be at least 3 times larger than the actual soap capacity desired, so as to allow room for boiling, since the soap swells when killing the stock, in boiling and finishing. There is no fixed proportion between diameter and depth.—a kettle 15 feet in diameter and 15 feet deep will turn out 25 tons of soap. To prevent loss of heat from the sides of the kettle these are covered with a non-conducting material such as asbestos, or jacketted with wood, an air space being left between the wood and the kettle. R. G. Gupta. *Indian Soap J.* **6,** 344-8 (1940).

—— ♦ ——

Oil Foam Test

The foaming of vegetable oils has been found to be a measure of the degree of purity of the oil, crude oils foaming considerably under experimental conditions, refined oils very little. The apparatus is similar to that used for measuring the lathering power of soap solutions. Very fine bubbles of air are passed through the oil to produce foaming. The total volume of foam is measured, and the number of minutes necessary for half the original volume of oil to separate as a layer after the passage of air is stopped. This latter figure is called the "half-value time." Results with two oils are shown in the table:

The results indicate that crude oils form a stable foam when fine bubbles of air are slowly passed through a column of the oil. Highly refined oils or pure triglycerides do not foam under the same circumstances. Foaming power and more particularly, the stability of the foam, serve as a measure of the degree of purification of the oil, the less foam formed and the less stable it is, the purer the oil. Results with coconut and palm-kernel oil were ambiguous.

The cause of the foaming of oils is primarily their content of lecithin, glutinous matter and saponins. The presence of other constituents such as unsaponifiable matter including sterols, pigments, etc., and of free fatty acids also favors foaming action. The volume of foam formed increases on warming, but the stability decreases. Stability of the foam increases with increasing viscosity. H. P. Kaufmann and P. Kirsch. *Fette und Seifen* **47,** 196-201 (1940).

OIL	*Total Volume cc.*	*Half-value Time minutes*
Soybean oil, crude	141	36
Soybean oil, water-washed	140	14
Soybean oil, water-washed and neutralized	137	7.5
Soybean oil, water-washed, neutralized and bleached	28.5	0
Linseed oil, crude	140	36
Linseed oil, water-washed	141	25.5
Linseed oil, water-washed and neutralized	140	5.5
Linseed oil, water-washed, neutralized and bleached	34	0

Deodorizing Oils

Animal and vegetable oils are continuously deodorized by passing them through a first vacuum zone, removing from the zone the volatile constituents released from the oil, withdrawing the unvaporized oil from the zone and heating it. The heated oil is passed through a second vacuum zone of lower pressure than the first, and the volatile constituents released from the oil are removed from the second zone. The deodorized oil is finally removed. Foster Wheeler Corp. British Patent No. 510.852.

Recovering Whale Oil

Oil extracted from whale bones is treated by means of rotary steam digesters provided with a separating tank from which the gravity-separated oil is passed to collecting tanks. The first portion of the oil, which contains only traces of glue water and solids, is passed into one collecting tank and the rest of the oil, which contains finely divided tricalcium phosphate and other impurities, is passed into a second collecting tank. The latter oil is treated in centrifugal machines arranged for continuous or intermittent discharge of the separated solids. Aktiebolaget Separator, Lever Bros. & Unilever Ltd. and Bertram R. Bostock. British Patent No. 511.264.

Lauric Acid Esterification

Monolaurin was prepared in 40 per cent yield by heating one molecule of lauric acid with 1.4 molecules of glycerine at 240° C. for 30 minutes. S. Kawai and H. Nobori. J. Soc. Chem. Ind., Japan **43,** Suppl. binding 110 (1940); through Chem. Abs.

Changes on Hydrogenation

Physicochemical changes were followed during the hydrogenation of cottonseed and sunflower seed oils. An increase of the viscosity and a decrease of the density of the hydrogenated oil were observed. The dependence of viscosity and density on the iodine numbers is expressed linearly. An approximate linear relationship was found between refractive index and the iodine number. The change of titer during hydrogenation has no such uniform relation to the change of iodine number as have the changes of viscosity and refractive index. G. B. Ravich. Khim. Referat. Zhur. **1939,** No. 8, 124; through Chem. Abs.

New Seed Oil

The average yield of the seed oil of *Xanthium strumarium* L. is 28.8 per cent of air-dry matter. In the total weight of the fruit the crude fat amounts to 18-19 per cent. The oil has acid number 0.51, saponification number 205.19, iodine value 136.17 and unsaponifiable matter 0.91. The oil has most of the physical and chemical properties of sunflower-seed oil. N. M. Maksimov. Compt. rend. acad. sci. U.R.S.S. **26,** 393-5 (1940); through Chem. Abs.

Herring Oil

Herring-oil fatty acids with neutralization value 197.3, saponification number 199.0, and iodine number 128.9 were distilled and 28.5 per cent of a lower-boiling fraction, 205-17° C. obtained. This had a neutralization value of 221.1, saponification number 220.9, and iodine number 76.9, and contained about 2.2 per cent of lauric acid and 0.9 per cent of capric and caprylic acids. H. Nobori. J. Soc. Chem. Ind., Japan **43,** Suppl. binding 110 (1940); through Chem. Abs.

Aliphatic Compounds

Valuable aliphatic compounds are obtained by treating hydrocarbons containing chlorine, preferably hydrocarbons with a molecular weight above 140, with oxidizing gases in the presence of catalysts at a temperature of 90-200° C. The products obtained are used in the soap and cosmetics industries. Among examples, a petrolatum whose melting point is 42-44° C. is treated at 80° C. with chlorine until absorption amounts to 23.3 per cent. The chlorinated product is oxidized by air at 110-113° C. in the presence of 0.2 per cent of potassium permanganate as a catayst. Henkel & Cie. G.m.b.H. French Patent No. 842.261.

Fat Splitting

In autoclaving hardened fish oils with lime, complete splitting was obtained by interrupting the operation six times and allowing the sweet water to run away. Crude lime causes discoloration of the fatty acids but this disadvantage can be overcome by the use of refined lime. Sei-iti Ueno, G. Inagaki and H. Tutikawa. J. Soc. Chem. Ind., Japan **43,** Suppl. binding 101-2 (1940); through Chem. Abs.

Oil Dehydration Test

The solubility of castor oil in alcohol can be used as an index of the degree of dehydration of the oil. Into a 10-cc. graduated cylinder about 10 mm. in diameter, introduce 5 cc. of the dehydrated oil and 5 cc. of ethyl alcohol. Shake for 1-2 minutes and allow to settle. The volume of the insoluble oil layer, when expressed in percentage, gives the degree of dehydration and corresponding polymerization of the prepared oil. A. M. Kulikov. *Org. Chem. Ind.* (U.S.S.R.) **7,** 176 (1940); through Chem. Abs.

Sulfonated Fatty Acids

The sulfur trioxide content of sulfonated fatty acids and fatty glycerides is increased by mixing the sulfonated materials with a non-aqueous liquid consisting of at least 1 halogenated organic solvent. This dissolves the unsulfonated fatty material. The mixture is allowed to settle into two layers, which are separated —the aqueous layer carrying the sulfonated compounds, the non-aqueous layer the unsulfonated fatty compounds. National Oil Products Co. Canadian Patent No. 389.758.

Sulfonation Process

A product suitable for use as a detergent is prepared by a process which involves sulfonating a salt of a saturated higher fatty acid such as sodium stearate with sulfur trioxide in the presence of liquid sulfur dioxide. Eugene D. Crittenden, to Solvay Process Co. U. S. Patent No. 2 195,145.

Phosphates as Inhibitors

THE extent to which the various forms of sodium phosphate inhibit the precipitation of calcium carbonate from ammoniacal solution has been investigated. The presence of sodium metaphosphate lengthens the time required for precipitation to commence; after precipitation has begun the metaphosphate diminishes the rate of precipitation; if sufficient metaphosphate is present precipitation is entirely prevented. Glassy sodium hexametaphosphate and sodium pyrophosphate are about equally effective in suppressing the precipitation of calcium carbonate. At a concentration of about 1 p.p.m. either salt will prevent the precipitation of calcium carbonate from solutions containing 200 p.p.m. of calcium bicarbonate and 550 p.p.m. or ammonia.

Crystalline sodium metaphosphate is relatively ineffective under simliar conditions, but in the presence of caustic potash it acquires the inhibitory action. Orthophosphates exhibit a slight ability to inhibit precipitation, but this is limited by reaction to form insoluble calcium orthophosphate. Of 14 analogous inorganic salts studied including borates, vanadates, arsenates, etc., none possess the inhibitory property of the phosphates. The efficiency of inhibition of precipitation of calcium carbonate is increased by the presence of ammonium and neutral sodium salts.

The nature of the inhibitory action was studied by means of the ultramicroscope. The results indicate that calcium carbonate does not go into the colloidal state nor is such a state stabilized by the presence of metaphosphate. When insufficient metaphosphate is present to prevent precipitation, larger, fewer, and grossly distorted crystals of calcite are formed. Chemical studies of the precipitates indicate that the metaphosphate is adsorbed by the calcium carbonate in amounts such that the calcium to phosphorus ratio attains a constant value of about 300 in the presence of metaphosphate concentrations greater than 0.6 p.p.m.

The mechanism of the inhibition process is conceived as involving primarily a restricted or deranged crystallization due to adsorption of the metaphosphate on the crystal faces. R. F. Reitemeier and T. F. Buehrer. *J. Physical Chemistry* ***44,*** 535-74 (1940).

Diffusion of Soaps

Free diffusion of soaps in dilute aqueous solution was studied by means of a refractometric method. It was possible to measure the differential diffusion constants of fatty acids with chain lengths up to that of lauric acid. For sodium laurate the measurements in pure aqueous solution were made up t oa 0.075 Normal solution at 20°C. Salts of higher fatty acids would have to be measured at higher temperatures because of their low solubility at room temperature.

The sodium salt of lauric acid diffuses at 20°C. 3½ times more slowly at a concentration of 0.05 Normal as at a concentration of 0.005 Normal. Between these limits there exists a range in which the diffusion constant decreases. Below and above this range diffusion is normal. Within the range the behavior is as if different components were present diffusing independently of one another. Within this critical interval the diffusion process is anomalous.

A similar behavior occurred with sodium caprate but the lowering of the diffusion constants occurred at high concentrations. With the laurate it was at concentrations of 0.01-0.035 Normal, with the caprate at concentrations of 0.08-0.15 Normal. At higher concentrations a constant value for the speed of diffusion was reached. Sodium caprylate showed a decrease in the speed of diffusion in 0.05 Normal concentration and up. The critical interval therefore occurs at very high concentrations and its limit was not reached at 0.27 Normal concentration. The measurements were broken off at that point.

The method of measurement permits investigation of factors which influence micelle formation, especially the addition of other substances and the effect of temperature. Ole Lamm and Hilding Högberg. *Kolloid-Zeitschrift* **91,** 10-19 (1940).

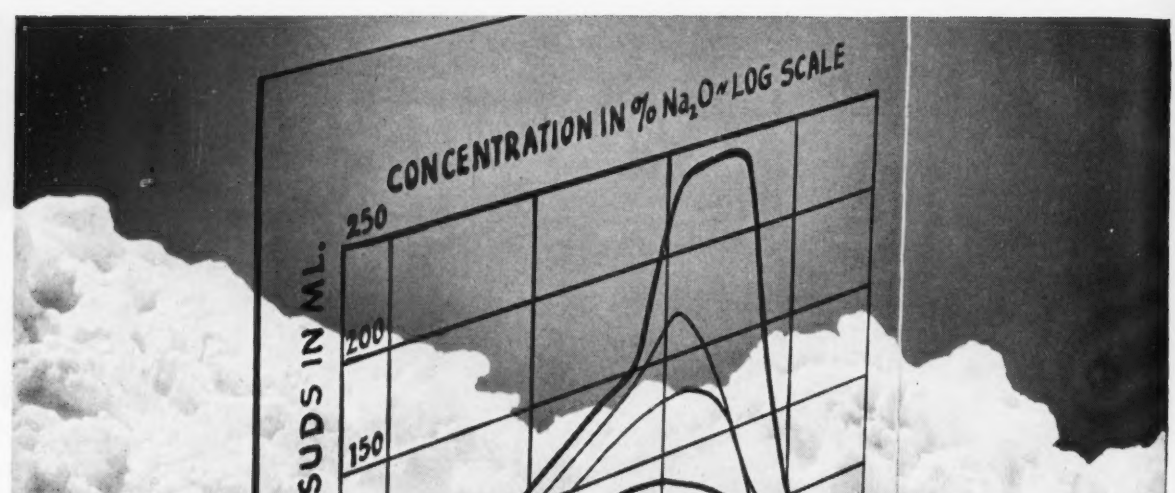
Five-component Catalysts

Five-component catalytic mixture in the proportions 40:30:15:10:5, formed by co-precipitation of 5 metallic salts in the presence of kieselguhr and reduction by hydrogen in the usual manner, were added to soybean oil in the proportion of 0.3 gram of metal to 100 grams of oil, and the oil-catalyst mixture was heated to 180°C. under 10 atmospheres hydrogen pressure after which the hydrogen pressure was raised to 30-50 atmospheres for 0.5-1 hour.

In the catalytic system nickel-copper-cobalt-manganese the addition of chromium, magnesium, zinc or lead as the fifth metal markedly increases catalytic activity, iron retards it, while calcium or barium has no pronounced influence. In the catalytic system nickel-copper-cobalt-zinc the addition of lead, calcium or iron as a fifth metal promoted catalytic activity, while manganese retarded it. Catalysts containing nickel-copper-cobalt-manganese and a fifth element are more active, in general, than those containing nickel-copper-cobalt-zinc and the fifth element. Nickel-copper - magnesium - cobalt catalysts containing manganese, chromium, lead, barium, calcium, zinc or iron as a fifth metal were not as active as the 4-component catalyst system. Sei-iti-Ueno and Takehide Suzukawa. *J. Soc. Chem. Ind., Japan* **42,** Suppl. binding 350-1; through Chem. Abs.

Washing Product

A washing product is obtained by mixing pulverized sodium metasilicate with trisodium phosphate and potassium carbonate. Mineral substances such as pumice stone, sand and quartz or in certain cases soap powder, are added. Paul Brodman. French Patent No. 842,473.



*

PQ SILICATES YIELD "MOUNTAIN HIGH" SUDS

● **HERE'S** a rising curve you want to see when measuring the sudsing efficiency of your soaps and detergents. The silica or SiO_2 in PQ Silicates aids you to build detergents and soaps that yield a larger amount of suds than any other of the materials ordinarily added to soap.

The above graph is one of many evidences that the function of silica in increasing suds is distinct from that of alkali. May we show you further proof of PQ Silicates' sudsing potency and maximum soil removing power?

*Suds formed on an 0.0088 per cent Sodium Stearate solution vs. units of alkali, showing Silica effect. Top curve, Sodium Silicate. Other three curves, non-silicated alkalis.

[*Send for our Detergency Series of Bulletins—no obligation.*]

SILICATES OF SODA

33 GRADES FROM $3Na_2O$, $2SiO_2$ to Na_2O, $3.9SiO_2$

PHILADELPHIA QUARTZ CO.

General Offices and Laboratory: 125 S. Third St., Philadelphia, Pa.
Chicago Sales Office: 205 W. Wacker Drive. Stocks in 60 cities.
Sold in Canada by National Silicates Ltd., Toronto, Ontario.

Works: Anderson, Ind., Baltimore, Md., Chester, Pa., Buffalo, N.Y., Kansas City, Kans., Jeffersonville, Ind., Rahway, N. J., St. Louis, Mo., Utica, Ill.

Products and Processes

Silicate Soaps

Powdered detergents readily soluble in cold water are produced by the reaction of fatty acids with sodium silicate specially prepared in solid form so as to have an apparent specific gravity not exceeding 1. The total quantity of water present during the reaction must be insufficient to dissolve a substantial proportion of the silicate. The temperature should be low enough not to cause volatilization or decomposition of the fatty acid. The product contains at least 5 per cent of soap. For stearic acid, for example, temperatures of 60-90° C. are suitable, the reaction requiring about 30-50 minutes, the time depending on the fineness of the silicate and the amount of water in the system. A stable product results which remains loose and free-flowing in storage. Jos. Crosfield & Sons, Ltd. British Patent No. 521,910.

◆

Hard-water Soaps

Soaps which dissolve in hard water with little or no precipitation of insoluble soaps can be made with the use of saturated fatty acids having more than 18 carbon atoms in the molecule, such as arachidic (20 carbon atoms), behenic (22) and lignoceric (24) acids. Incorporation of these fatty acids permits the use of larger quantities of saturated fatty acids of 12-18 carbon atoms in hard-water soap than would otherwise be possible. A soap dissolving rapidly in hard water may be made with 10-30 per cent of saturated fatty acids having more than 18 carbon atoms in the molecule, at least 30 per cent of unsaturated fatty acids, and not more than 30 per cent of palmitic acid or of a 1:1 mixture of palmitic and stearic acids. Any other saturated acids present should be of lower molecular weight than palmitic acid. To ensure rapid solution the soaps must be in the form of powder, flakes, threads, pellets or the like.

Although addition of phosphates is not required these considerably improve the properties of the product, particularly when used for washing at the boiling temperature. The ratio of phosphate to fatty acid is preferably 1:10 to 1:4 for orthophosphate or pyrophosphate, and 1:4 to 1:2 for polyphosphate or metaphosphate. Lever Bros. & Unilever, Ltd., R. Thomas and H. B. Oakley. British Patent No. 521,566.

◆

Aliphatic-aromatic Detergent

Apparatus is described and a process for preparing a detergent material by the reaction of a fatty oil or fatty acid with a polyhydric alcohol, a sulfonating agent, and an aromatic compound of the benzene, naphthalene or anthracene series. The reaction product is then neutralized. As initial materials there may be used, respectively, coconut oil, glycerine, fuming sulfuric acid, naphthalene and caustic soda. Emil E. Dreger and John Ross, to Colgate-Palmolive-Peet Co. U. S. Patent No. 2,195,581.

◆

Brushless Shave Cream

A mixture is used consisting of a fatty material such as stearic acid, palmitic acid, paraffin fatty acids or hydrogenated coconut-oil fatty acids 5-30 per cent, water 50-80 per cent, together with 0.5-10 per cent of the butyl ester of sulfonated oleic acid or similar compound. Wolf Kritchevsky, to Rit Products Corp. U. S. Patent No. 2,195,713.

◆

Superfatting Agent

Products which are a combination of aliphatic and aromatic compounds make emulsions useful in the textile industry, in shaving creams and for superfatting soaps. As an example, 10 parts of monoglycol stearoylglycolate with the acid No. 22, made by causing equimolecular quantities of sodium stearate and monoglycol chloroacetate to react, are melted and stirred with 0.8 part of 35° Be. caustic potash solution. Twenty parts of this mixture are melted with 20 parts of petroleum jelly, and 60 parts of warm water are gradually added with stirring to produce a homogeneous white salve. Ryoki Kimbara. British Patent No. 511,043.

◆

Naphthenic Acid Soaps

The term, naphthenic acids, is used to describe cyclic carboxylic acids occurring in petroleum. Crudes rich in paraffin have a low naphthenic-acid content, about 0.1 per cent, while crudes poor in paraffin may contain 1-3 per cent. The lower members are colorless liquids when pure, the higher ones are yellowish. Naphthenic acids possess powerful bactericidal properties, as do their salts. Sodium potassium, and triethanolamine soaps prepared from purified naphthenic acids are appreciably less alkaline in reaction than other soaps. Their aqueous solutions even in high concentrations do not jel. Equal parts of carbon tetrachloride, cyclohexanol and sodium naphthenate make a good dry cleaners soap. Naphthenic soaps have a higher solvent power for hydrocarbons and give less foam than palmitate soaps. The former are more effective in producing oil-in-water emulsions. B. Levitt. *Chem. Industries* **47,** 166-7 (1940).

◆

Hand Protection Creams

As an alternative to the use of mechanics' hand soaps, products have been offered which serve to protect the hands from collecting deep-seated grime. These products are to be applied to the hands before work is started. One such product is sold as a cream to be rubbed into the hands, consisting of a form of vanishing cream to which has been added about 20 per cent of china clay. The clay is supposed to fill the pores of the skin, preventing deposition of dirt there. A liberal amount of glycerine is present to give an emollient effect. Subsequent washing of the hands in the ordinary manner removes the cream preparation along with the dirt adhering to the outside of it. A. Rayner. *Soap, Perfumery & Cosmetics* **13,** 438 (1940).

One to Two Thousand Pounds of Soap an Hour on this Efficient—

WATER COOLED SOAP MILL

No. 89 A — Three Roll Chilled Iron Water Cooled Soap Mill.

This mill is especially efficient for making fine toilet soaps. It is equally capable of producing thin flakes because of its water-cooled, chilled iron rolls and easy adjustments.

Two sizes are available, one with 12-inch rolls, 24-inches long, the other with rolls 30-inches long.

Heavy frames, and bronze lined or roller bearings give assurance of long life under heavy duty conditions.

ONE OF SEVERAL MILL TYPES MANUFACTURED BY

HOUCHIN MACHINERY COMPANY, Inc.

HAWTHORNE Fifth and Van Winkle Aves. **NEW JERSEY**

New Patents

Conducted by

Lancaster, Allwine & Rommel

Registered Attorneys

PATENT AND TRADE-MARK CAUSES

402 Bowen Building, Washington, D. C.

Complete copies of any patents or trade-mark registration reported below may be obtained by sending 25c for each copy desired to Lancaster, Allwine and Rommel. Any inquiries relating to Patent or Trade-Mark Law will also be freely answered by these attorneys.

No. 2,210,420, Insecticide, patented August 6, 1940, by Frank F. Lindstaedt, Oakland, California. A horticultural spray composition comprising, a petroleum oil, and an oil soluble sulphonated naphthenic acid.

No. 2,210,594, Insecticide, patented August 6, 1940, by John E. Morrow, East St. Louis, Illinois, assignor to Aluminum Company of America, Pittsburgh, Pa. An insecticidal grade of precipitated sodium-aluminum fluoride having a bulk density, as precipitated, of about 75 to about 120 cubic inches per pound accompanied by high adherence and high suspendibility. In a process for producing an insecticidal grade of sodium-aluminum fluoride by precipitation from green liquor at a temperature below about 220° F., said green liquor containing sodium, aluminum, and fluorine compounds and dilute caustic alkali, the steps comprising neutralizing the liquor with a gaseous acidic material until the point of incipient precipitation is reached, causing rapid precipitation by the addition of a large volume of liquid acidic material, adding a second volume of said green liquor without appreciably raising the temperature of the mixture, completing the precipitation of the mixture to increase the particle size of the previously formed precipitate to the desired degree by the addition of further amounts of gaseous acid material, and drying the final precipitate at a temperature below about 200° F.

No. 2,210,894, Insecticidal Emulsion, patented August 13, 1940, by Edgar C. Britton, Midland, Michigan, assignor to the Dow Chemical Company, Midland, Michigan. An aqueous insecticidal emulsion suitable for application to living plants without causing injury thereto, comprising up to about 5 per cent of an oil having an unsulphonatable residue of at least 50 per cent by weight and up to about 0.5 per cent of a compound selected from the group consisting of 2.4-dinitro-phenol and 2.4-dinitro-alpha-naphthol.

No. 2,210,924, Floating Toilet Soaps, patented August 13, 1940, by Ben B. Hood, Trona, California, assignor to Lever Brothers Company. A process of producing water-buoyant milled soap which comprises the steps of enclosing a quantity of relatively thin, warped, milled soap particles, in a sealed container, thereafter establishing an interstitial gaseous content at subatmospheric pressure, the weight of gas, relative to the weight of soap, being such that subsequent compression of the mixture may compact the soap into a coherent whole, with interstitial gas which, when released and expanded to atmospheric condition, will result in the coherent whole having a specific gravity less than 1, and so compressing the mass.

No. 2,210,929, Insecticidal Composition patented August 13, 1940, by Sheldon B. Heath and Merlin O. Keller, Midland, Michigan, assignors to the Dow Chemical Company, Midland, Michigan. An insecticidal composition adapted to be employed as a horticultural spray or dust, comprising a dinitro-phenol and sufficient of a water-soluble acid buffering agent to establish and maintain in aqueous dispersions of the composition a pH value of below 5.

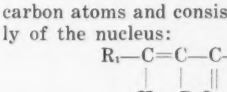
No. 2,211,140, Fatty Acid Soap, patented August 13, 1940, by Francis J. Licata, New York, N. Y., assignor to National Oil Products Company, Harrison, N. J. A process of producing a new metallic soap which comprises saponifying a hydroxylated fish oil with an alkaline agent in amount of at least 30 per cent, based on the weight of the oil, in excess of that required for stoichiometrical combination, and precipitating the soap thus formed with a salt of a polyvalent metal to form the corresponding metallic soap. As a new composition of matter, a water-insoluble soap of a hydroxylated fish oil having an ash value of at least 30 per cent.

No. 2,212,432, Detergent, patented August 20, 1940, by Robert L. Brandt, New York, N. Y., assignor to Colgate-Palmolive-Peet Company, Jersey City, N. J. A method of washing fruits and vegetables to remove spray material from the surface thereof, comprising applying thereto an aqueous solution of a mineral acid containing a small proportion, not in excess of 3 per cent by weight, of a composition prepared by fractionally distilling, solvent extracting caustic, acid and contact clay treating mineral oil, so as to produce a material boiling around 220 to 240° C. at 5 mm. pressure, said solvent extraction being performed at around —15° to +15° C., by the use of liquid sulphur dioxide, which tends to dissolve certain constituents of the oil and not to dissolve others, the constituents which the solvent tends to dissolve being generally those of an unsaturated nature, including those of an aromatic nature, thereafter treating the material, while in solution in liquid sulphur dioxide, with a sulphonating agent, washing the product with a substantially saturated hydrocarbon solvent substantially all of which volatilizes below 250° F., and neutralizing the washed sulphonation product.

No. 2,212,464, Disinfectant, patented August 20, 1940, by Edmund Weidner, Berlin-Charlottenburg, Germany. A disinfectant and plant protective composition of acid reaction comprising a thiocyanate and a substance selected from the metals and metal compounds capable of forming a sulfide which is slightly soluble in acids.

No. 2,212,519, Insecticide, patented August 27, 1940, by William K. Griesinger, Lansdowne, Pennsylvania, assignor to the Atlantic Refining Company, Philadelphia, Pennsylvania. In the manufacture of an insecticidal composition, the steps comprising sulfonating a relatively low boiling petroleum fraction, extracting water-soluble sulfonic acids from the sludge resulting from the sulfonation, neutralizing the extracted sulfonic acids with an alkaline earth hydroxide to form water-soluble alkaline earth sulfonates treating the alkaline earth sulfonates with a water-soluble nicotine salt to form water-soluble nicotine sulfonate and water-insoluble alkaline earth salt, and separating the nicotine sulfonate from said insoluble salt.

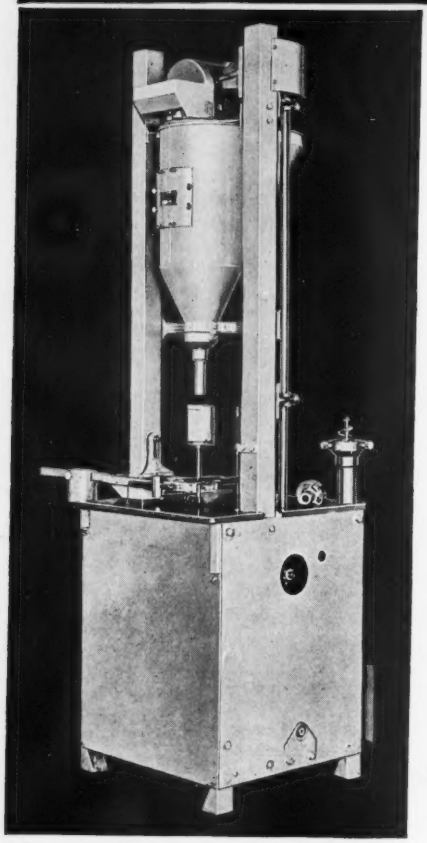
No. 2,212,529, Insecticide, patented August 27, 1940, by James William Swaine, Bayside, N. Y., assignor to General Chemical Company, New York, N. Y. An insecticide comprising an organic compound containing not less than 8 and not more than 18 carbon atoms and consisting essentially of the nucleus:



R_1 representing a furyl or phenyl radical, R_2 representing H or an alkyl or acyl radical, and R_3 representing a straight or branched carbon chain, a phenyl, a naphthyl, or a furyl radical, or a mixed radical consisting of a

(*Turn to Page 74*)

"S & S" FILLING • PACKAGING • WRAPPING EQUIPMENT



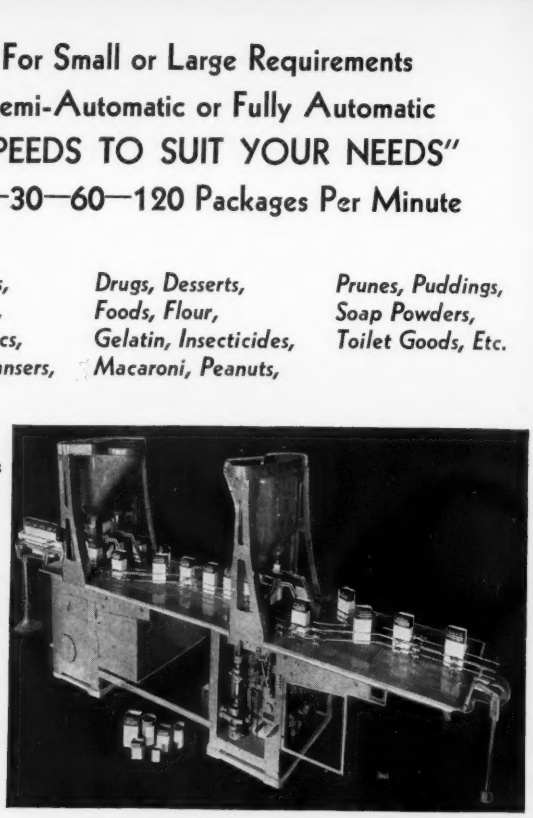
A

For Small or Large Requirements
Semi-Automatic or Fully Automatic
"SPEEDS TO SUIT YOUR NEEDS"
15—30—60—120 Packages Per Minute

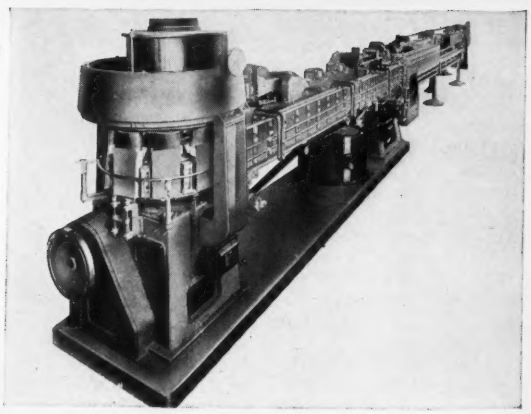
For

Cakes, Crackers, Candy, Cereals, Cocoa, Cosmetics, Chemicals, Cleansers, Drugs, Desserts, Foods, Flour, Gelatin, Insecticides, Macaroni, Peanuts, Prunes, Puddings, Soap Powders, Toilet Goods, Etc.

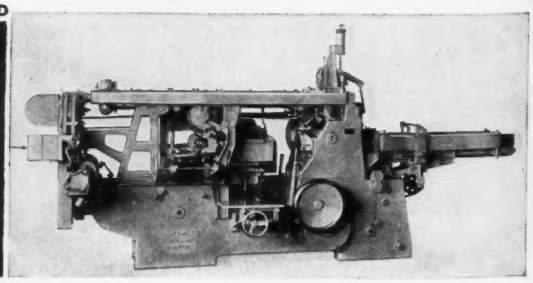
B



C



D



A. *UNIVERSAL FILLING MACHINE*
for Powders, Granular Products or Pastes.
15–20 Per Min.

B. *AUTOMATIC FILLING MACHINE*
Two or Four Station.
30–60–120 Per Min.

C. *CARTON FILLING & SEALING MACHINE*
15–30–60–120 Per Min.

D. *TIGHT WRAPPING MACHINE*
15–60 Per Min.

WE WILL GLADLY SEND COMPLETE INFORMATION. WRITE TO:

STOKES & SMITH Co
PACKAGING MACHINERY — PAPER BOX MACHINERY
4915 SUMMERDALE AVE., PHILADELPHIA, U. S. A.

New Equipment

IF YOU want additional information on any of the items described below or if you want any of the bulletins, catalogs, etc., write to the MacNair-Dorland Co., Inc., 254 West 31st St., New York, mentioning the number of the item.

736—Bottle Cleaner

"Sanitair," a new addition to the cleaning equipment line of U. S. Bottlers Machinery Co., Chicago, is an automatic rotary bottle and container cleaning unit for removing carton lint, dust and dirt which accumulates on new glassware during packing and shipping. The double-action unit utilizes a blast of compressed air of from 50 to 90 pounds per square inch as a cleaning medium and is adapted to handle a wide variety of styles and types of containers. It can be installed in any automatic production line by inserting in the present conveyor set-up. Bulletin is available on request.

737—Glass Sterilizer

National Technical Laboratories, South Pasadena, Cal., has recently produced a device known as the "Sterimatic" for soda fountains which automatically provides a sterilizing solution for cleansing soda glasses and other utensils behind the counter. The sterilizing agents are compactly arranged and completely concealed behind an ivory "Plaskon" covering which is simply designed and easily kept clean. The housing is molded by McDonald Manufacturing Co., Los Angeles.

738—Petroleum Sulphonates

Petroleum Specialties, Inc., New York, has just published a 15-page descriptive bulletin on petroleum sulphonates and mahogany soaps, their properties, compositions, and applications in the manufacture of wax emulsions, cleaners, disinfectants, textile soaps, rust preventive compounds and cutting oils. The use of "Filtrasol 35-F" and "Filtrona F" as fat-splitting reagents is also covered in detail.

739—Folder On Glycols

Carbide and Carbon Chemicals Corp., New York, has recently published a folder on glycols, the second in a series of folders which present the properties, uses and possibilities of organic chemical families. In this latest folder, ethylene glycol, several poly-ethylene glycols, propylene glycol and dipropylene glycol are described, and a table of reference data on commonly used physical constants and solubilities is given. Among the uses for glycols in industry are as solvents, plasticizers, emulsifiers and dispersing agents.

740—Hand-Gluer

A hand-gluer of 26 inch capacity is the first item of a new line of simplified and standardized container sealers for corrugated shipping containers just announced by A-B-C Manufacturing Co., Quincy, Ill. The new hand-gluer is available in all lengths, it is said, beginning with a standard six-foot unit. Other types of special packaging machinery are to be developed by the company in the near future.

741—Alkaline Cleaner

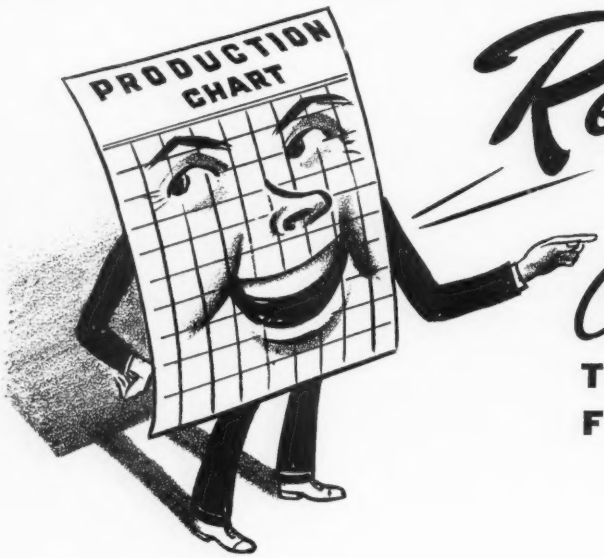
Chase & Hale, Inc., St. Paul, Minn., are currently distributing a descriptive circular on their product, "Blue Tag," an alkaline cleaner for aluminum and tin equipment and utensils, painted surfaces and woodwork. According to the manufacturers, "Blue Tag" cannot harm, corrode or attack tin, tin-plate or aluminum.

742—New Toilet Deodorant

Pioneer Manufacturing Co., Cleveland, has recently put on the market a new product, "K. O. (kill odor) Blox," blocks of chemicals which are submerged in the flush tanks of toilets and, by releasing nascent oxygen, are said to kill odors and prevent stains and fungus growth in the bowl. According to the maker, a block lasts three or four weeks.

743—Prentiss Insecticide Folder

R. J. Prentiss & Co., New York, are currently distributing folder describing the Prentiss line of pyrethrum powder, pyrethrum extract, rotenone bearing root powders, bedbug, flea and lice preparations and red squill powder. A bait chart for



Results TALK...

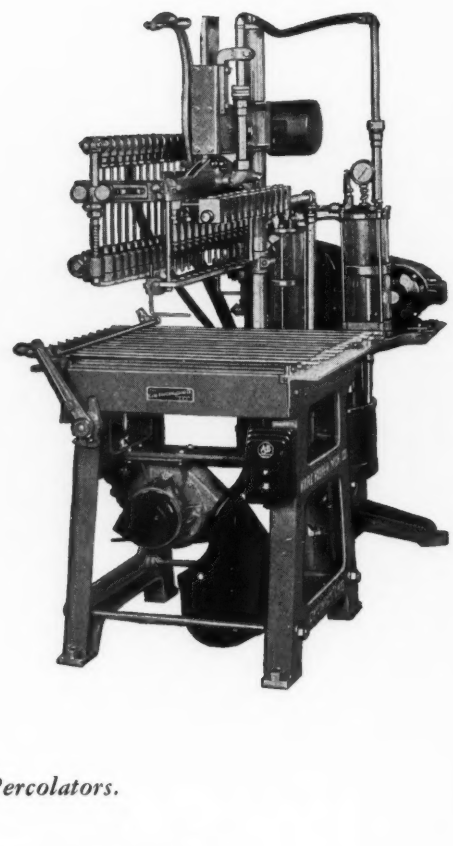
KIEFER *Combination*

TL CLEANING AND FILLING MACHINE

—cleans and fills the bottles in a single operation!

The whole job done in a flash . . . so, no wonder your production costs are almost infinitesimal.

Filtered compressed air removes the dirt from one entire row of bottles while the filling of another is done to a hair-line accuracy, without a drop of drip. Then discharged upon belt conveyor!



WE BUILD

Completely Automatic
. . . Semi-Automatic . . .
Hand-fed Equipment
to clean, fill, close and
convey bottles, jars, tins
and collapsible tubes.

Filters . . . Pumps . . . Percolators.

New York
Boston
Chicago

THE KARL KIEFER MACHINE CO.
CINCINNATI, U. S. A.
London, England

Los Angeles
San Francisco
Seattle

As Chemical Salesmen Golfed at Pomonok

UPPER LEFT—Herb Kranich of Kranich Soap. UPPER CENTER—Wayne Haley of Columbia Alkali, Charles Alexander of Seldner & Enequist, Herb Finn of Standard Oil Co. of N. J. and Fred Neuberg of Warner Chemical. UPPER RIGHT—Harry Gleichert of Columbia Alkali, John Eldredge of Virginia Smelting, Ed Manley of Chemical Corp. and Jack Leppart of Columbia (not a university). LOWER LEFT—Al Alvarez of Grasselli, Lyman Lloyd of Alex Fergusson, and Ed Maguire of Grasselli. LOWER RIGHT—Walter Merrill of Jos. Turner, Frank Fanning of Malmstrom and Ira Vandewater of R. W. Greeff.

using red squill is included in the folder.

◆

744—Maintenance Book

Flexrock Co., Philadelphia, is currently distributing the fourth edition of the Flexrock Hand Book of Building Maintenance. This illustrated 74-page book is available on request.

◆

Issue 75th Textile Blue Book

The 75th annual edition of *Davison's Textile Blue Book*, directory of textile manufacturers, drygoods firms and allied trades in the United States, Canada and Mexico, has just been published by Davison Publishing Co., Ridgewood, N. J.

◆

Paraffin Fatty Acids

Practically colorless and odorless soap-forming fatty acids can be obtained from the crude fatty-acid mixtures which result from the oxidation of paraffin, by subjecting the mixtures to fractional distillation under a strongly reduced pressure. The first runnings boil under 2 mm. of mercury pressure up to about 130° C. and are removed. The soap-forming acids boiling under these conditions up to 260° C. are recovered with the application of steam. This valuable second fraction contains high-molecular fatty acids having an acid value from 330 to 200. I. G. Farbenindustrie A.-G. British Patent No. 518,963.

◆

Fulling Soap

A low-titer soap is most suitable for fulling since it is more soluble than a high-titer soap and saves time, steam and labor. It gives more even distribution and quick penetration of the soap on the cloth and rinses more rapidly, with a greater protection against odor development. Its main disadvantage is that it does not provide the same heavy body that high-titered soaps have, and which some finishers prefer under some conditions.

Soaps do not break down in the fulling process itself unless the cloth is on the acid side. What happens is that frequently too little soap-alkali solution is used to emulsify all the dirt, oil, loose dyes, etc., on the cloth. The fulling solution should be of sufficient strength to do a good fulling job and build a good first suds for the scouring operation.

A convenient system for handling fulling soap is to store the solution in 1 or 2 large tanks from which the soap is pumped to the fulling mills and the washers. Such a system is described with a diagram. Bull. Textile Research Dept. of Procter & Gamble Co.

◆

Soap Stabilizer

The incorporation of 0.1 per cent of a biguanide compound such as mono-ortho-tolyl biguanide, monophenyl biguanide or mono-xylyl biguanide in soap has a marked retarding action on rancidity development. These compounds do not ordinarily discolor soap even on exposure to sunlight, thus differing from such stabilizers as diphenylamine. Robt. L. Sibley and Monsanto Chem. Co. British Patent No. 521,863.

Barrett
CHEM

CHEMICALS for the SOAP & DISINFECTANT INDUSTRIES

U.S.P. Cresol	Chlor Xylenol	Cyclohexanol
Cresylic Acid	Pyridine	Methyl Cyclohexanol
Tar Acid Oil	Quinoline	Solvent Naphtha
Para Chlor Meta Cresol	Alpha Picoline	Dip Oils

THE BARRETT COMPANY, 40 RECTOR STREET, NEW YORK, N. Y.

ONE OF AMERICA'S GREAT BASIC BUSINESSES

Barrett
CHEMICALS

Send for this Booklet!

This 36-page, pocket-size booklet provides a finger-tip reference of concise descriptions and uses for Barrett Chemicals. Send for your copy.

In producing flakes for granulated soaps, toilet cakes or packaging, high speed output can often be an item of great saving. With the New Proctor Flake Soap System, from the hot liquid soap in the kettle or crutcher to the dried flakes requires only 6 to 14 minutes and capacities may be obtained from 750 to 6000 lbs. per hour, according to flake thickness, character of soap, etc. At this stepped-up production, quicker deliveries are assured and there are tremendous savings in floor space and equipment. Complete details are contained in a new 16-page illustrated catalog, that is yours for the asking.

PROCTOR & SCHWARTZ · INC · PHILADELPHIA

NEW PROCTOR *Flake Soap* SYSTEM

Citronella Oil

(*From Page* 35)

Analysis of Citronella Oil: There has been much discussion in literature as to the proper methods of analyzing citronella oil, especially in regard to the total geraniol content. It might, therefore, be worthwhile to indicate briefly the most reliable methods used in routine analyses.

Specific gravity, optical rotation and refractive index are determined by the regular methods which are also described in the United States Pharmacopoeia.

For the evaluation of the total geraniol content, we recommend the method of acetylation given by Gildemeister and Hoffmann[3]. For obtaining exact and uniform results, it is important to heat the acetylation flask on a sand bath or in an oil bath, but not over a direct flame. The analytical laboratory of the Government Control Laboratories in Buitenzorg, Java, use electric hot plates[4].

The content of citronellal may be determined by the hydroxylamine-hydrochloride method[5].

The presence of alcohol is indicated by too low specific gravity. It can be more definitely ascertained by the salt water test described in Volume I of Gildemeister and Hoffmann's *Die Atherischen Ole*, Third Edition, page 789. The presence of fatty oils is revealed in the regular solubility test in 80 per cent alcohol. This test, too, is described in Gildemeister and Hoffman's work, same volume as above, page 790. Low-boiling petroleum can be detected by a flash point determination. It is done in the "closed cup" apparatus of Pensky-Marten. A description is given in Gildemeister and Hoffman's work, Third Edition, Volume II, page 634, under Oil of Cassia.

Petroleum is more difficult to identify because of its wide boiling range. The most suitable method consists in fractionating the citronella oil and carefully examining the suspected fractions by odor. Gildemeister and Hoffmann in the work cited above, Volume II, page 43, under Oil of Turpentine, give a method for determining the presence of petroleum. The complete oil or the suspected fraction is oxidized with fuming nitric or concentrated sulfuric acid and the petroleum identified by the refractive index of the residue. Similar methods, applied to Java citronella oil, have been described by J. Zimmerman[6].

Whenever it is not deemed advisable to fractionate the oil, the complete oil can be destroyed according to the methods explained in the United States Pharmacopoeia, 11th Edition, under Oil of Turpentine. Finally the refractive index of the residue is determined; it will be between 1.42 and 1.45, while that of the original product is around 1.48 and higher.

While in Ceylon, the writer secured a sample of the so-called mineral turpentine which, as mentioned previously, has lately been offered freely in Ceylon for cutting oil of citronella. Analysis of the sample in our New York laboratories showed the following constants:

Specific Gravity at 15° C.	0.816
Optical Rotation	Inactive
Refractive Index at 20° C.	1.4569
Solubility at 20° C.	Soluble in 7 volumes and more of 90% alcohol
Evaporation Residue	0.7%
Flash Point	+40° C.
Distilling Range	151 to 155° C. — 3.0%
	155 to 160° C. —11.0%
	160 to 165° C. —32.0%
	165 to 170° C. —24.0%
	170 to 175° C. —14.0%
	175 to 180° C. — 8.0%
	180 to 187° C. — 4.0%
	96.0%

Solubility: As pointed out previously, there are two distinct Schimmel solubility tests, i.e., the "Schimmel test" proper and the "raised Schimmel test." The latter is hardly of any practical significance, while the "Schimmel test" proper is employed according to two interpretations—the "old Schimmel test" and the "new Schimmel test." They are carried out according to the methods described below. In our laboratories we conduct the tests in a glass-stoppered cylinder, graduated in 0.1 cc. divisions, using 80.0 ± 0.01 per cent alcohol by volume (Sp. Gr. 0.8642 at 15° C.) and at exactly 20° C. throughout.

The Old Schimmel Test: "Oil of citronella Ceylon is soluble in 1 to 2 volumes of 80 per cent alcohol by volume at 20° C. The solution should remain clear when the amount of alcohol added is increased to 10 volumes or should at the most become slightly opalescent, but never separate oil even after standing for several hours. While adding the alcohol, violent shaking should be avoided, for otherwise such oil as has not gone into solution may be so firmly suspended that a separation takes place only after prolonged standing, thus interfering with the observation."

(*Note:* The phrase "slightly opalescent" allows for a wide range of interpretation but, in general, the mere absence of an oily separation is sufficient for accepting this oil as meeting the "old Schimmel test." This test allows for the presence of up to 7 and even more per cent kerosene. Most contracts for purchasing Ceylon citronella oil are today based upon thir test.)

The New Schimmel Test: "Oil of citronella Ceylon must be clearly soluble in from 1 to 2 volumes of 80 per cent alcohol by volume at 20° C. Upon the further addition of alcohol of the same strength, the solution should show an opalescence at the most but no turbidity or direct cloudiness. The alcohol must be added

[3] *Die Atherischen Ole*, Third Edition, Vol. I, 724 and Vol. II, 345.

[4] J. Zimmerman, *Ind. Mercuur* 55, 277 (1932), *Perf. & Ess. Oil Record* 23, 128 (1932). D. R. Koolhaas, *Ind. Mercuur* 58, 429 (1935).

[5] Rowaan and Koolhaas, *Chem. Weekblad* 32, 405 (1935); *Perf. & Ess. Oil Record* 26, 253 (1935)—"Dutch Standard Method."
"The Determination of Carbonyl Compounds," Reclaire and Frank, *Perf. & Ess. Oil Record*, June 1938.
See also Report of the Essential Oil Sub-Committee of the Standing Committee on Uniformity of Analytical Methods: Report No. 10, The Determination of Citronellal, *Analyst*, 57 (1932) 773.

[6] *Chem. Weekblad* 31, 132 (1934); *Perf. & Ess. Oil Record* 25, 249 (1934).

slowly, drop by drop; the addition being at once interrupted if a cloudiness or turbidity appears. The alcohol is then added slowly, drop by drop, until the point of highest or maximum cloudiness or turbidity is obtained.

"The mixture is carefully set aside and kept at 20° C. to observe if any oily constituents separate out. Ten volumes of 80 per cent alcohol at the most are added. If oil separates out after prolonged standing or immediately, the oil does not pass the "new Schimmel test." Strong or violent shaking must be avoided since any possible oily separation will become finely dispersed and will not separate out on standing."

(*Note:* This test is a much finer criterion of the purity of a Ceylon oil. Many oils show an oily separation if no further alcohol is added beyond the point of highest cloudiness or turbidity, but show no oily separation if 10 volumes of 80 per cent alcohol are added. Therefore, the test is much more stringent than the "old Schimmel test" but still it permits the presence of about 3 to 4 per cent kerosene. It is unfortunate that this test is not used more universally as the basis for commercial contracts, instead of the "old Schimmel test.")

The Raised Schimmel Test: "Oil of citronella Ceylon is mixed with 5 per cent of petroleum, either Russian or American, and the "old Schimmel test" is applied, disregarding any intermediate stages of cloudiness or turbidity, simply adding 80 per cent alcohol up to 10 volumes. A fresh, unadulterated citronella oil will show no oily separation. Oils containing small amounts of petroleum will show an oily separation immediately or after prolonged standing at 20° C.

(*Note:* This test is by far the most stringent of the three. A good quality, freshly distilled oil will meet this test without any trouble. This test has, however, no practical significance in the trade, due to the fact that oils which are slightly old will not readily pass it.)

Chemical Constitution: It is not the purpose of this study to go into the details of the chemistry of Ceylon citronella oil which is described in Gildemeister and Hoffmann's classical work. Undoubtedly, the chemistry of the Java citronella oil has been investigated much more thoroughly because this oil is used in large quantities for the manufacture of synthetics; by fractionating the oil on a large scale many new constituents present only in small quantities, have been discovered. Suffice it to enumerate here the constituents found in the Ceylon citronella oil.

The oil contains about 10 to 15 per cent terpenes, among them camphene, dipentene, l-limonene and other terpenes of very low specific gravity. Two sesquiterpenes are present, one of them probably identical with sesquicitronellene. The oxygenated compounds consist principally of geraniol (26.7 to 38.8 per cent)[7] and citronellal (5 to 16 per cent). The proportions of these two constituents are much higher in the Java oil. The Ceylon oil also contains: methyl-heptenone (traces), l-borneol, nerol, geranyl acetate, citronellyl acetate and butyrate, methyl-eugenol and farnesol.

Summary: The Ceylon citronella oil industry is suffering through the competition of the Java oil which is produced in extremely large quantities and exported under strict Government control. All efforts toward improving the quality and the yield of the Ceylon oil by proper methods of cultivation will be in vain unless the nuisance of adulterating the Ceylon oil is completely abolished. This can be achieved either by insistence on the part of buyers abroad or by Government control in Ceylon. There is always danger that the present users of Ceylon oil may replace it in their formulas with the Java oil which, though somewhat different, is of excellent, if not superior quality, and today even lower priced. Ceylon has, therefore, every reason to protect its citronella oil industry which for many years has played quite an important part in the agriculture and in the exports of Southern Ceylon.

[7] *Bericht von Schimmel & Co.* 1929, 20.

Alkali Silicates

(*From Page* 31)

41. Rose, Heinrich. Ann. Physik. **73**, 84 (1823).
42. Schwartz, Robert and Menner, Ernst. Ber. **57B**, 1477-81 (1924).
43. Schwartz, Robert and Richter, H. Ber. **60B**, 2263-70 (1927).
44. Scheerer, T. Ann. Chem. Pharm. **116**, 129-60 (1860).
45. Snell, Foster Dee. Ind. Eng. Chem. **24**, 76-80 (1932).
46. Snell, Foster Dee. Ind. Eng. Chem. **24**, 1051-7 (1932).
47. Snell, Foster Dee. Ind. Eng. Chem. **25**, 162-5 (1933).
48. Snell, Foster Dee. Ind. Eng. Chem. **25**, 1240-6 (1933).
49. Moss, Henry V. and Snell, Foster Dee. U. S. Patent 1,989,765 (1935).
50. Vail, James G. Soluble Silicates in Industry, A.C.S. Monograph No. 46 (1928), p. 101.
51. Vail, James G. Soluble Silicates in Industry, A.C.S. Monograph No. 46 (1928), p. 126.
52. Vail, James G. Trans. Am. Inst. Chem. Eng. Preprint (1930); Chem. Met. Eng. **37**, 736-40 (1930).
53. Vail, James G. Private Communication.
54. Verrier, Auguste-Henri. French Patent 373-884 (1907).
55. Vesterberg, A. Orig. Com. 8th Intern. Congr. Appl. Chem. **2**, 255-9 (1912).
56. Yorke, Philip. Phil. Trans. **147**, 533-42 (1857); Phil. Mag. (4) **14**, 467-7 (1857).

New Patents

(*From Page* 67)

straight or branched carbon chain and a phenyl, naphthyl, or furyl group.

No. 2,212,536, Insecticidal Composition, patented August 27, 1940, by Edgar C. Britton, Gerald H. Coleman, and John W. Zemba, Midland, Michigan, assignors to the Dow Chemical Company, Midland, Michigan. A liquid insecticidal composition having dispersed therein as an active toxicant an aryloxypolyalkylene ether iodide having the formula

$$R—(O—C_nH_{2n})n—I$$

wherein R represents an aromatic radical and n is an integer from 2 to 5, inclusive.

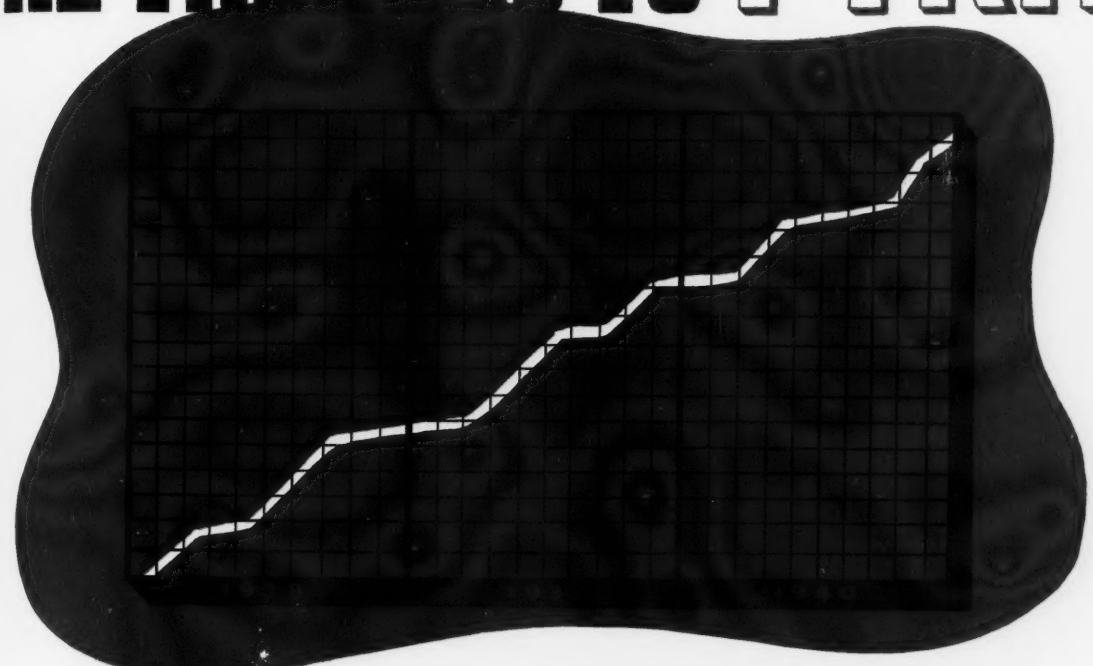
No. 2,213,156, Insect Repellent, patented August 27, 1940, by Philip Granett, New Brunswick, N. J., assignor to National Carbon Company, Inc. An insect repellent composition which consists of an inert diluent and a repellent; said repellent consisting of at least one compound having the formula $(R_1—O—(C_2H_4O)\ n—R_2$, wherein R_1 may be a lower alkyl group, monocyclic aryl group, or aralkyl hydrocarbon group, R_2 may be hydrogen, a lower alkyl group, monocyclic aryl group, aralkyl hydrocarbon group or acetyl group, and n is 1 or 2.

Sanitary Products SECTION

A Section of "SOAP" dealing with

Insecticides • Disinfectants • Moth Products
Floor Products • Polishes • Chemical Specialties

THE TREND IS TO PYRIN



After 3 years there are 4¼ buyers of PYRIN to every one buyer of Basic Pyrethrum Extract.

JOHN POWELL & CO., INC.
114 East 32nd Street, New York City.

KILLING POWER—that's the thing!

NO OBJECTIONABLE ODOR

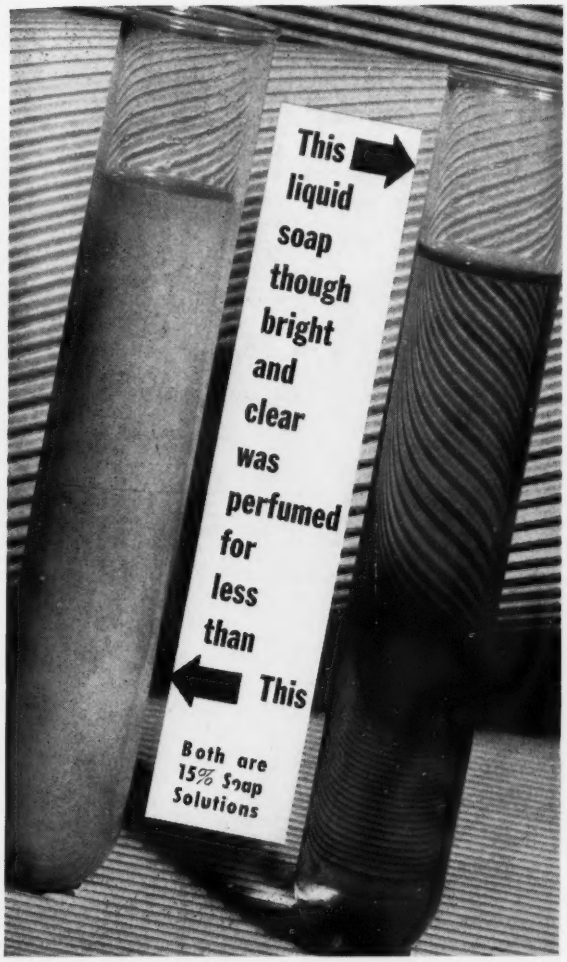
Lethane 384 Special

LETHANE 384 Special is particularly recommended for highly concentrated sprays because it has no objectionable odor.

RÖHM & HAAS COMPANY, INC.

222 West Washington Square, Philadelphia, Pa.

CHICAGO • KANSAS CITY, MO. • OAKLAND, CALIF. • *Canadian Agent*—P. N. SODEN & CO., LTD., MONTREAL



What Every Liquid Soap Manufacturer Should Know about MM&R "L.S." Perfume Oils

THE CAMERA SHOWS WHAT THE LABORATORY PROVES—

1. In a soap solution, (even as dilute as 15%), M M & R "L.S." Perfume Oils dissolve clearly without filtration and permit the liquid soap to remain sparklingly bright, crystal clear, and glass-like in transparency.
2. It actually costs less than 1/10 cent to perfume a gallon of liquid soap (soapless shampoo, etc.) if you use M M & R "L.S." Perfume Oils.
3. The use of M M & R "L.S." perfumes results in liquid soaps that look better, smell better,—cost less and sell faster!

M M & R "L. S." Perfume Oils

PERFUME OIL BLUEBELL L.S. A refreshing odor.
PERFUME OIL ORANGE BLOSSOM L.S. Fragrant and flowery.
PERFUME OIL ROSE BLEUE L.S. Delicate, different.
PERFUME OIL LILAS VEGETAL L.S. Aristocratic lilac.
PERFUME OIL LILAS BLANC L.S. Masculine odor.
PERFUME OIL TI-TREE L.S. Strongly germicidal odor.

For a limited time, we will ship a pound of any of the above "L.S." odors (regularly $2.25) at the 100 lb. price..$1.80

MAGNUS, MABEE & REYNARD, INC.

QUALITY ESSENTIAL OILS, BALSAMS AROMATIC CHEMICALS, ETC.. SINCE 1895

16 DESBROSSES ST. NEW YORK, N. Y.

CHICAGO: 180 N. WACKER DRIVE . . . CANADA: RICHARDSON AGENCIES, LTD. 454 KING ST., W., TORONTO

KLENZ-AIRE DEODORANT OILS

BOUQUET KLENZ-AIRE DEODORANT OIL
LAVENDER KLENZ-AIRE DEODORANT OIL
LILAC KLENZ-AIRE DEODORANT OIL
MINT KLENZ-AIRE DEODORANT OIL
PINE NEEDLE KLENZ-AIRE DEODORANT OIL
ROSE KLENZ-AIRE DEODORANT OIL

FORMULA FOR USE:

3 OUNCES KLENZ-AIRE DEODORANT OIL (any odor)
3 OUNCES FORMALDEHYDE U. S. P. 40%
Q. S. WATER TO MAKE ONE GALLON

THE ABOVE MAKES A FINISHED DEODORANT SPRAY IN MILKY EMULSION FORM WHICH MAY BE COLORED ANY DESIRED SHADE TO MAKE IT MORE ATTRACTIVE.

Order Trial Pound

CITROGEN

This is a product of unusual odor value. It is not intended to reproduce the odor of Citronella. It possesses a distinct and powerful character, refreshing in type. Citrogen is more stable in soap than Citronella, and represents a greater dollar-for-dollar odor value over oils such as Citronella, Camphor Sassafrassy, etc.

CITROGEN No. 22

This product is a substitute for either Citronella Ceylon or Java. It can be particularly recommended for cheap laundry soaps whereby the use of 1% or 1 pound to 100 pounds gives a very pleasant and refreshing odor. Being lower in price than the Citronella Oils, our Citrogen No. 22 should be of considerable interest.

NEW PRICE LIST SENT ON REQUEST

CAMFOL

A product to replace Camphor Sassafrassy. It is of particular interest at this time because of the high price and scarcity of the original product.

We are certain that experiments made with Camfol in comparison with Camphor Sassafrassy will prove decisively that Camfol will replace it in most cases and at a saving in cost.

SAVONEX

A new low priced odorant, possessing the following qualifications:

1. Water White.
2. Twice the odor value of such products as Camphor Sassafrassy or Sassafras Artificial.
3. One-half the present price of Sassafras Artificial.
4. Maintains its odor in soap longer and more pleasantly.
5. It can be purchased on a large scale here in America and your supply is guaranteed.

OIL BERGAMOT SYNTHETIC SUPERFINE

YOU NEED IT — YOU CAN USE IT!

Remarkable reproduction of the natural oil. Successfully used in many places such as colognes or certain perfumes, or employed in varying proportions mixed with the natural for the finer products.

AROMATIC PRODUCTS, INC.

5 E. 30th Street, New York FACTORY: Springdale, Conn.
ATLANTA — CHICAGO — PITTSBURGH — DALLAS — MEMPHIS

DEEP into PAY DIRT!

CONTAINER-WISE . . . *"NATIONAL"* tirelessly digs deep into the "pay dirt" of Package style . . . skillfully turning up practical *essentials and brilliant display features that quicken SALES from shelf and counter.* ★ *"NATIONAL" Container Service is deep-rooted in the rich soil of Experience. It presents a constantly fresh viewpoint on Sales-by-the Package, and expert craftsmanship in can-making and lithographed decoration adds every refinement of Container production and finish.*

"NATIONAL" TAKES OVER YOUR PACKAGING SPADE-WORK!

NATIONAL CAN CORPORATION

SUBSIDIARY OF McKEESPORT TIN PLATE CORPORATION

EXECUTIVE OFFICES • 110 EAST 42nd STREET • NEW YORK CITY

Sales Offices and Plants • NEW YORK CITY • BALTIMORE • MASPETH, N. Y. • CHICAGO • BOSTON • DETROIT • HAMILTON, OHIO

What's the difference between

PARAPONT*

and just para-dichlorobenzene?

"PARAPONT" is more than just para-dichlorobenzene. To users the name "Parapont" is a guarantee of purity and uniformity. No matter how many times you re-order, you can be confident that you'll get a high-quality product. "Parapont" is *always* white, *always* free-flowing and lustrous. Available in six granulations, each is consistently pure and uniform. You can obtain "Parapont" on short notice. Du Pont always has an adequate supply on hand—to fill every commercial need, in any quantity. Place a trial order with us. We believe that you, like most users, will be back for more.

*TRADE MARK

DU PONT

E. I. DU PONT DE NEMOURS & CO. (INC.)

ORGANIC CHEMICALS DEPARTMENT • WILMINGTON, DELAWARE

SHORT, SHORT SUCCESS STORY

"I've had my biggest season on Para and Napthalene products. I used Felton's Coloromes exclusively to color and perfume them in one easy operation

WE WILL GLADLY SEND SAMPLES AND DESCRIPTIVE LEAFLET OF COLOROMES ON REQUEST. WRITE TODAY!

FELTON
CHEMICAL COMPANY, INC.
603 Johnson Avenue, Brooklyn, N. Y.
Stocks in Principal Cities

...for *Para Blocks* and crystals—

DICHLOROMES NORDA

for Paradichlorbenzene

Series A $1.00	*Series B* $1.50	*Series C* $2.00
Bouquet A	Bouquet B	Bouquet C
Lilac A	Lilac B	Lilac C
Rose A	Rose B	Rose C
Violet A	Violet B	Violet C
Sweet Pea A	Sweet Pea B	Sweet Pea C
Gardenia A	Gardenia B	Gardenia C

☆

SECTOROMES NORDA

for fly sprays

Priced at 50c and $1.00 per pound

Ask NORDA for further details.

Norda

ESSENTIAL OIL and CHEMICAL COMPANY

Chicago Office
325 W. Huron St.

Los Angeles Office
2800 E. 11th Street

St. Paul Office
Pine and E. 3rd St.

Canadian Office
119 Adelaide St., W., Toronto

New York Office
601 West 26th St.

Southern Office
Candler Annex Bldg., Atlanta, Ga.

Dilutes Clear — Stays Clear!

NO insecticide manufacturer needs to take chances with pyrethrum concentrates that do not dilute to finished sprays of sparkling clarity. There is no necessity for supplying products that may go cloudy on the dealer's shelf. Consumer dissatisfaction with murky sprays which carry the implied threat of danger of staining fabrics and draperies can and should be avoided.

Prentiss pyrethrum concentrate dilutes clear, —and stays clear. It rids the insecticide manufacturer of any fear that his finished spray, clear when packed, may reach the ultimate consumer looking dull, cloudy and perhaps unsafe to use.

#

R. J. Prentiss & Co., Inc.

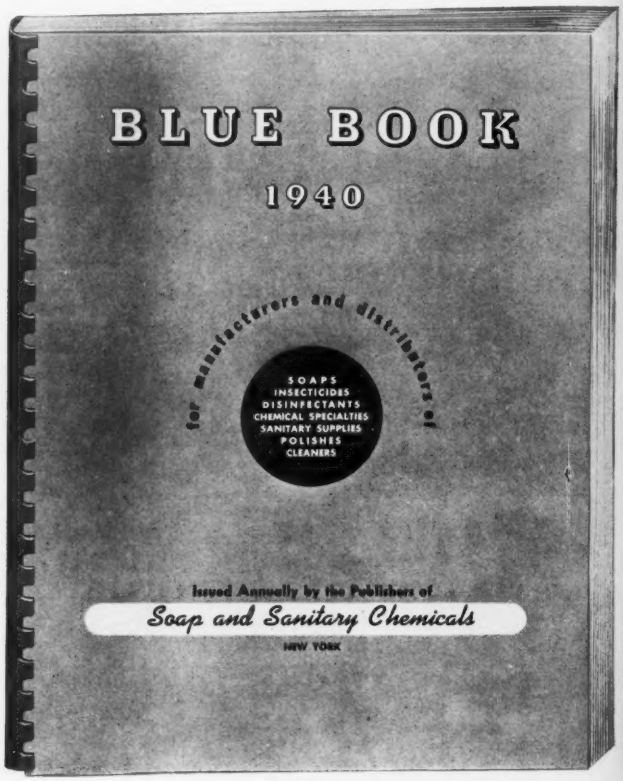
New York Chicago

Cube Pyrethrum Derris

The 1940 BLUE BOOK

is an invaluable reference volume for every soap and sanitary chemical firm, —that will find service every day in the year. Keep your copy readily available for day-to-day use. Familiarize yourself with the wide variety of useful information it contains.

If you have not received a copy of the new BLUE BOOK ensure your getting one at once by entering a subscription to Soap and Sanitary Chemicals *now*. A check for $3.00—the price of a yearly subscription—entitles you to a copy of the BLUE BOOK without extra charge.



Contents of the 1940 BLUE BOOK

Soap Perfuming—A review of perfuming principles, with detailed comments on suitability of some 150 essential oils, aromatic chemicals, resins, fixatives, etc. for use in white and colored soaps.

Labeling— A review of general labeling requirements for soaps and sanitary chemicals in the light of recent changes in federal laws. Sample labels for typical products.

Soap Builders—Notes on new and old filling and improving agents for use in soaps, their incorporation in finished products and the effects they produce.

Liquid Shampoos— A study of the various types of liquid shampoos on the market, with comments on changing formulae.

Metal Polishes— A review of the various types of polishes, with typical formulae for chromium polish, brass polish, silver polish, liquid and powder type metal polishes and polish specifications.

Specifications—A review of U. S. specifications for soaps, polishes, waxes, cleaners, chemicals, etc. Specifications of the N.A.I.D.M. for insecticides and disinfectants.

Testing Section—Latest official methods of the National Assn. of Insecticide & Disinfectant Mfrs. and of the Association of Official Agricultural Chemists for testing the efficacy of insecticides, insecticidal raw materials and disinfectants. Included in this testing section will be the Peet-Grady Test, the Seil Method. Gnadinger-Corl Method, F.D.A. Method, Mercury Reduction Method and Rotenone Determination Method.

Index to Soap—A complete composite index to the monthly issues of *Soap and Sanitary Chemicals* for the years 1934 through 1939, making it easy to locate valuable technical information and reference articles.

Association Officers— A list of officers and directors of important trade groups in the soap and sanitary chemical field.

Plus a complete 125-page Buyers Guide Section listing sources of supply for a complete line of raw materials, machinery and equipment bought by manufacturers of soaps and sanitary chemicals.

MAC NAIR-DORLAND COMPANY

254 WEST 31st STREET **NEW YORK, N. Y.**

A Minor Detail

The perfume in your insecticide is a very minor factor in both price and quantity. But in the finished product scent is of primary importance. A spray must be pleasant to use in the home to insure consumer acceptance. This detail must be given the utmost consideration. We believe that our experience will be of value to you. Send us a gallon of your unperfumed insecticide and let us submit samples of balanced perfume already in your product.

VAN AMERINGEN-HAEBLER, INC.

315 FOURTH AVE., NEW YORK CITY

CRESOL—U.S.P. with very close cut distillation range and light color, for pharmaceutical purposes—Meta-Para Cresol with high meta cresol content—Resin cresols close cut to wide boiling with guaranteed meta cresol contents and clean odor.

CRESYLIC ACID—Many distillation ranges appropriate for all established uses—pale color—clean odor—total impurities besides water not exceeding one half of one per cent.

TAR ACID OILS—Frozen crystal free at 0°C.—good emulsion-forming properties—low benzophenol content—appropriate for low to high coefficiencies with tar acid contents as required.

KOPPERS COMPANY, Pittsburgh, Pa.

PRODUCTS OF THE WHITE TAR COMPANY OF NEW JERSEY, INC., a Koppers subsidiary

REFINED NAPHTHALENE...
Crushed, Crystals, Powder, Lump, Chips, Flakes. For use in manufacture of deodorizing blocks, moth preventives and other insecticides. Also Naphthalene in Balls, Blocks, Tablets.

COAL TAR DISINFECTANTS...
Co-efficients 2 to 20 plus, F.D.A. Method.

CRESOL AND CRESYLIC DISINFECTANTS

PINE OIL DISINFECTANTS

PINE OIL DEODORANTS

CRYSTAL AND BLOCK DEODORANTS

LIQUID INSECTICIDES

DEODORIZING BLOCKS...
Pressed Naphthalene or Paradichlorobenzene. Various sizes and shapes. Perfumed and plain. Bulk industrial packages, retail packages. Write to Kearny, N. J.

KOPPERS CHEMICALS AND SOLVENTS
Benzol (all grades)...Toluol (Industrial and Nitration)...Xylol (10° and Industrial)...Solvent Naphtha (Including High Flash)...Phenol (82% and 90% Purity)...Cresol (U.S.P., Resin and Plasticizer Grades)...3° Meta Para Cresol...Cresylic Acid (Disinfectant Grades—99%, pale, low-boiling. Insecticide Grades—99%, pale, high-boiling)...Naphthalene...Shingle Stain Oil...Refined Tars...Tar Acid Oils...Pitch Coke...Industrial Coal Tar Pitches...Flotation Oils...Creosote

OTHER KOPPERS PRODUCTS
Benzol Recovery Plants...Naphthalene Removal Apparatus...Sulphur Recovery Apparatus...Phenol Removal Apparatus...By-Product Recovery Apparatus...Coal Tar Roofing Materials...Waterproofing and Dampproofing Materials...Tarmac Road Tar Materials...Bituminous Base Paints...Coal...Coke...Fast's Self-aligning Couplings...Piston Rings...Pressure-treated Lumber

KOPPERS

CIDAN #1

A NEW DISINFECTANT BASE MILD IN ODOR AND A LOW PRICED, POWERFUL GERMICIDE

● With Cidan #1 you can make specialty disinfectants with a relatively mild odor to be used in hotels, hospitals, restaurants, and other buildings where a disinfectant with a minimum amount of odor is desired. Such a disinfectant can be scented to give a definite aromatic note.

Because of its high germicidal strength even as low a concentration as 7% Cidan #1 in a potassium linseed oil soap will produce a disinfectant having a phenol coefficient of 2½ to 3—at approximately the same cost as a similar disinfectant made with cresylic acid.

Prolonged tests show that a disinfectant made with Cidan #1 will not lose its germicidal strength upon aging.

Learn the many advantages of this new disinfectant base by writing for samples and further information.

GIVAUDAN
DELAWANNA, INC.
330 WEST 42nd STREET, NEW YORK, N. Y.
Branches: Philadelphia, Los Angeles, Cincinnati, Detroit, Dallas, Baltimore, Chicago, San Francisco, Seattle, Montreal, Havana.

Service for Can Buyers

Crown makes metal containers promptly and expertly.

Here at last is an organization with one policy for all—fast, efficient, courteous service.

Perhaps this explains the remarkable growth of Crown Can sales and the fine spirit of good-will between Crown and its customers whether they are large or small.

You will like Crown's service on cans. Be sure to get Crown's proposition on your next order.

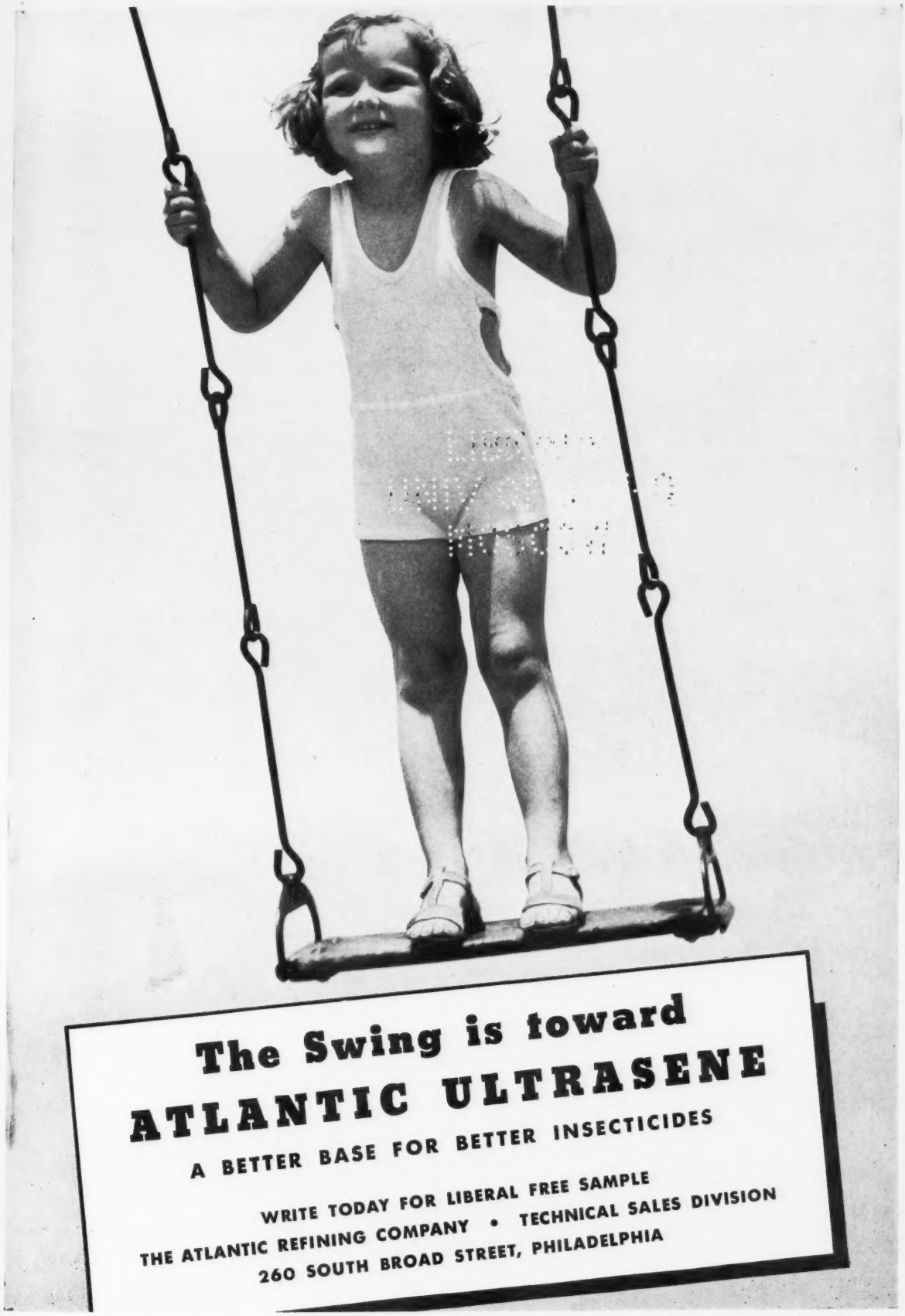
CROWN CAN COMPANY, PHILADELPHIA, PA.

Division of Crown Cork and Seal Company

BALTIMORE ST. LOUIS HOUSTON MADISON ORLANDO
FORT WAYNE NEBRASKA CITY

CROWN CAN

INDEPENDENT AND HELPFUL


The Swing is toward
ATLANTIC ULTRASENE
A BETTER BASE FOR BETTER INSECTICIDES
WRITE TODAY FOR LIBERAL FREE SAMPLE
THE ATLANTIC REFINING COMPANY • TECHNICAL SALES DIVISION
260 SOUTH BROAD STREET, PHILADELPHIA

We offer you the finest Pine, Coal Tar, and Cresylic Disinfectants produced in this country. Constant research and practical knowledge give us the right to make this statement. Examine a sample and see why these disinfectants are better—from any angle—color, odor, clarity purity or strength. A free sample will be sent you upon request.

Sanitary Products

A Section of SOAP

Official Publication, Nat'l. Assn. of Insecticide & Disinfectant Manufacturers

WARNINGS against use of the term, "harmless when used as directed," on fly spray labels, represent the advice of the technical head of one of the largest manufacturers. Not that the term as used may not be wholly correct, he points out, but it invites careless people to be even more careless, and to go beyond the reservation, "when used as directed." Such phraseology is also a direct invitation to law suits by the unscrupulous, and inasmuch as it serves no genuinely useful purpose on the can, is best left off. Viewing this advice from several practical angles, we believe that it is well worth heeding.

BARRELS, kegs, and other large containers of pyrethrum powder shipped by the suppliers of this material to the insecticide industry will, it is reported, be labeled on a basis of 0.5 per cent pyrethrum content irrespective of the fact that the actual pyrethrum content may be materially higher than this. The object of the suppliers is obvious. It is to protect themselves adequately against deterioration under the new pyrethrum labeling requirements of the Department of Agriculture. To us, this appears to be about the only solution of a complicated labeling problem as far as the supplier is concerned. But what of the insecticide manufacturer? It is evident that such labeling of his pyrethrum supplies may place him on the spot if he is not unusually cautious. The door is opened for inferior pyrethrum to be sold on an equal basis with high grade material,—that is if the buyer does not scrutinize well his purchases and his sources of supply. For him who buys odd lots of unknown origin or other powder at obviously too low a price, we indeed feel sorry. He is headed for trouble!

WHENEVER we go to a convention and listen to some speaker in thinly veiled phrases, usually behind the additional screen of a high-sounding scientific title, tell how swell are the products which his company makes, our reaction is a mixture of sorrow and anger. His crass attempt to take advantage of a place on the program to deliver a sales talk always makes us angry. The harm which his display of bad taste is bound to do to himself, his firm and its products, makes us feel sorry for him. And we are quite certain that the reaction of most convention audiences is just about the same as our own.

In the long run, does such a policy pay, we have often speculated? Isn't there a boomerang effect in the implied insult to the intelligence of the informed listener? Is it smart selling to "put one across" for your products under the guise of a scientific address? After hearing the grumbling and sharp comment following "addresses" of this character at many a convention, we feel that it is exactly the reverse of smart selling. And yet representatives of some of our best companies are among the offenders in this respect. We believe that there are many places to advertise and sell goods, but that the speakers' platform at a convention is not one of them.

What Composition for

ROACH POWDERS?

WHAT is the best all-around composition for a roach powder,—and why? Off hand, this question might appear easy to answer, particularly if the reply is sought among pest control operators who have had some years of practical experience in handling bad roach infestations. But the answer is not as simple as giving the best composition and letting it go at that. If the answer may be judged by the diversity of opinion among insecticide manufacturers and pest control operators, there simply is no one ideal formula for a roach powder.

No matter what the suggested composition, there are criticisms of one kind or another which appear valid. Pyrethrum deteriorates, sodium fluoride is poisonous, borax is too slow and uncertain, rotenone is involved by patents,—and the arguments against combinations of these materials are merely combinations of the arguments. There is the matter also of phosphorus paste which is widely used by professional operators in roach control, but this product is purposely not being included in the discussion here as it does not enter into a controversy on powders.

In order to secure a cross-section of opinion on roach powder composition from insecticide manufacturers and pest control operators, one hundred firms were selected mostly at random from among the subscribers to *Soap & Sanitary Chemicals* in these fields, and a questionnaire asking various questions on roach powder was sent to each. To the large number who returned these questionnaires so that this report might be compiled, the editor is extremely grateful. Their answers reveal a wide variation in opinion, far wider than was anticipated when the questionnaire was sent out. Little attention has been paid to the technical literature apparently or to any organized research, most reporting firms basing their answers on observations in actual use or on the particular combination which they are now manufacturing and selling. A compilation of the data given in the answers must be set down solely as a cross-section of opinion in the trade.

Because the materials used as killing agents in roach powders today have narrowed down to pyrethrum, sodium fluoride, and borax, these are the products chiefly considered. The use of combinations of derris, cube, and other rotenone-bearing materials is naturally limited owing to patent complications. The use of pyrethrum with derris and other rotenone powders in combination is covered by patent and cannot be used except under license. Of the total roach powders made and consumed, probably ninety per cent are composed of pyrethrum or sodium fluoride, or mixtures of these. Borax finds only limited use today even though it is classified as an active ingredient by the Department of Agriculture.

If the most effective all-around roach killer is to be named, sodium fluoride is that product. Of course, this is not news to those in the trade. At the same time, the opinion is not unanimous in this respect. There are those who state that pyrethrum is just as effective, that is, if it is a high-grade powder running 0.7 per cent in pyrethrum or higher. And thereby hangs the tale. Advocates of straight pyrethrum as a roach killer point out that many pest control operators and some manufacturers have had practically all of their experience with low-grade pyrethrum, that is, powders which were originally only 0.4 or 0.5 per cent pyrethrins, or lower, or powders which are old and have deteriorated badly. They buy cheap, off-grade powders, it is stated, and then base their observations of effectiveness of pyrethrum on these powders, whereas they do not represent the actual effectiveness of a freshly milled, high-grade powder against roaches.

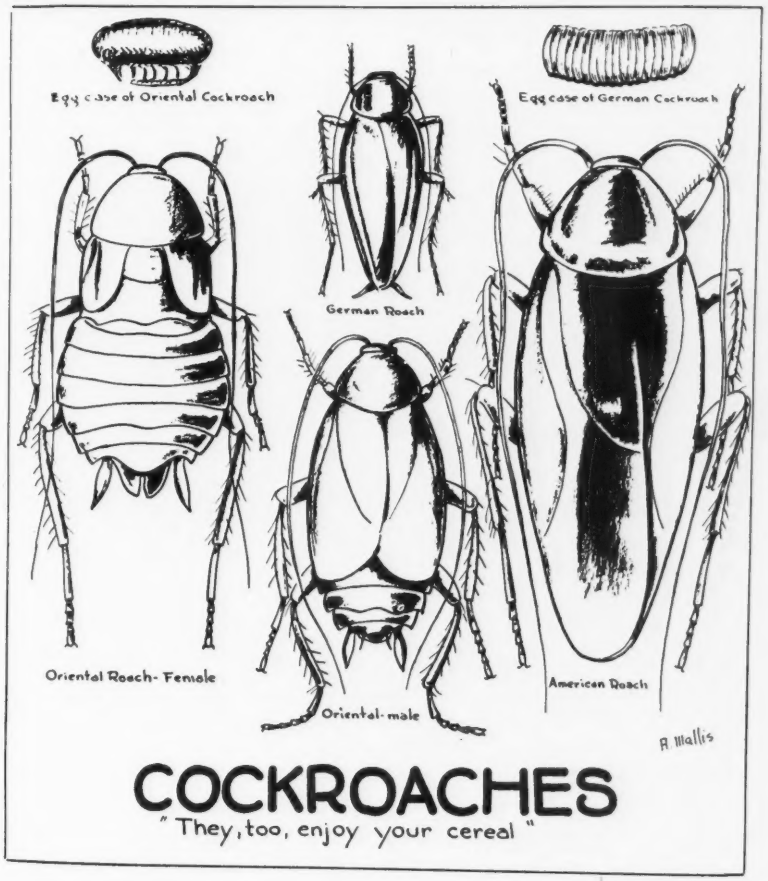
Irrespective of the merits of these arguments, the fact remains that pyrethrum does deteriorate and sodium fluoride does not, and where both have been kept in storage for long periods, the fluoride loses none of its effectiveness and the pyrethrum does. This is the main point, not considering cost, according to those in the trade, which influences exterminators and manufacturers to give sodium fluoride preference. But cost is also considered and always will be, and it is here that sodium fluoride which sells usually at half of pyrethrum prices, and often at only one-third, also has a great advantage.

WERE sodium fluoride non-poisonous to humans, it would undoubtedly be the ideal roach powder. But the fact remains that it is poisonous, not deadly poisonous in the sense of cyanides or thallium salts, but sufficiently so that it is classified by even the most liberal health officers as "highly toxic." This

should and does limit the places where it is used if safety is to be considered, and where this safety factor is ignored, the results are sometimes disastrous as every pest control operator knows. And it is a guess that many instances of "food poisoning" have been in fact mild cases of fluoride poisoning traceable to the wrong or careless use of this very effective insecticide material in kitchens of restaurants and hotels. It is for this reason that its use in some cities is forbidden by statute in and around places where food is stored, prepared or served.

Outside of the danger in its careless use,—and the fact that some exterminators maintain that it is too hard on their operators, — sodium fluoride has one other weak point in roach powders. It does not knock the roach down quickly enough. It gives him a chance to run away and hide and die out of sight, and this is not held to be good psychology for a bug killer. The housewife,—where a packaged insecticide is used,—wants to see the roaches stopped dead in their tracks. Where they run into the cracks and die later, she is not convinced that they are dead, particularly if she sees other roaches on subsequent days. And, of course, this is why so many manufacturers add a percentage of pyrethrum powder to their sodium fluoride, anything from 10 to 70 per cent,—to knock the roaches down.

The opinion appears to be almost universal among professional pest control operators that in mixtures of this kind, the pyrethrum knocks the roach over and the fluoride kills him. Obviously, if it were not for the psychological effect, the addition of pyrethrum to sodium fluoride roach powders would be superfluous. As it is, many manufacturers and operators ignore this point and do not use pyrethrum in their mixtures, maintaining that sooner or later the use of the straight fluoride powder will clean up the infestation and that this will be the best demonstration of the effectiveness of the product. Once again the point is made that if the pyrethrum is of low-grade, not much



can be expected from it even as a knock-down ingredient, and if it is a high-grade pyrethrum, the facts are quite definitely established that it will kill roaches of all kinds irrespective of prejudices to the contrary among some professional pest control operators.

WHEN it comes to non-poisonous roach powders, the manufacturer and exterminator are quite definitely limited. For an insecticide requiring positive and quick action, nothing appears to be left except straight pyrethrum. For the household package, this is answered by the customary can of insect powder, although the bugaboo of deterioration which has always bothered the packagers now rises to full height and takes on added significance on account of the new labeling regulations issued by the Department of Agriculture which became effective last September 1.

For the professional exterminator, it is not so much pyrethrum deterioration, but cost. On contract jobs, pyrethrum is an expensive material, particularly when the prices of the past two years are considered. Fluoride is so much cheaper that it is a temptation to use it, even where it is banned. Some exterminators, finding pyrethrum costs too high, are using special pyrethrum activated dusts, sometimes mixed with pyrethrum, sometimes as is. A few cut pyrethrum with powdered borax principally to reduce the cost. This addition of borax runs up to 50 per cent, although some exterminators maintain that anything over 20 per cent of borax reduces the effectiveness and speed of action too greatly.

Some professional operators are reported using derris, cube, and other rotenone powders mixed with three or four times their weight of talc, chalk, clay or other inert powder for roach control where a non-poisonous insecticide is called for in foodstuffs plants, candy factories, bakeries, restaurants, etc. The re-

sults are stated to be very encouraging. The dilution of the derris is usually made to bring it down to one per cent rotenone or less, at which figure it is reported effective against roaches. Although this is not believed to be widespread practice at the present time, reports indicate that some exterminators are trying out the method. At the present prices of derris, cube, etc., these materials used thus are placed on a competitive basis with sodium fluoride. The drawbacks as pointed out are that the effectiveness of derris due to deterioration is only slightly longer than that of pyrethrum, and the rate of action on the roaches is slow compared with pyrethrum. Where derris or cube are used merely with a diluent such as talc, clay, etc., there are no patent difficulties. Only when used in combination with pyrethrum are the rotenone materials covered by patent, and even in this case, royalty fees are low and inconsequential in the cost of the material.

SO FAR, little has been mentioned about borax as an ingredient of roach powders. The fact that its use as such has dwindled to comparatively small proportions during recent years appears to give the answer as far as the trade is concerned. Borax is cheap and safe to use. These are its good points. But the extreme slowness of its action on insects practically classifies it as a diluent where it is used. Published evidence indicates that borax requires from four to seven days to kill a roach and is not always certain even in that length of time. In practical use its main function is to reduce costs and dilute other ingredients. Majority of expressed opinion in the trade appears to indicate that borax has no place in a roach powder except as a filler.

Borax has been classified as an active ingredient in roach powders for some years by the Department of Agriculture, and still is, according to recent confirmation. It may be designated as such on the label. The question was recently raised in the trade, however, whether borax is considered 100 per cent an active material or whether in view of stricter regulations on pyrethrum labeling, the same might not also apply to borax in the matter of water of crystallization which it contains. This water of crystallization approximates 47 per cent of the total weight of the borax which has a chemical formula, $Na_2B_4O_7 \cdot 10\ H_2O$. However, inasmuch as the water is part of the definite chemical compound, the entire compound including the water of crystallization is considered active. If a liquid (water) product containing borax were carketed as an insecticide, then only the 53 per cent anhydrous part of the borax could be counted as active.

A detailed analysis of opinions from the trade on roach powder composition as shown by replies to our questionnaire, and a discussion of costs and labeling will be published in the next issue of SOAP & SANITARY CHEMICALS.—The Editors.

It is pointed out that in a statement of active ingredients on a roach powder, the impurities in sodium fluoride, for example, which are sodium sulfate, sodium chloride, and sodium carbonate, are not chemically combined with the fluoride, are separate products altogether and are considered inactive. On the same basis, if borax used in a powdered insecticide contains any impurities such as sodium carbonate, etc., these must also be calculated as inactive ingredients as in the case of sodium fluoride. Only the water of crystallization is excepted.

THE matter of including baits of one sort or another in roach powders has also been given thought by both manufacturers and operators. The idea of including some food material in a fluoride roach powder as an inducement to the roach to "eat" the material and thus get the poison into his stomach, has long been behind the use of baits. Both manufacturers and exterminators lean to this idea, and some of them include varying percentages of cocoa, flour, starch, or some other food material. Mixtures of sodium fluoride with equal parts of starch or flour are sometimes used, particularly by professional operators. The majority of roach powders, however, do not contain baits. As far as can be determined, the advocates of the idea are in the minority.

Some operators maintain that a roach poison will do a better and faster job when it contains a bait. On the other hand, baits are held to be useless and are classified as fillers. It is the contention of some manufacturer that a roach rarely deliberately "eats" a roach powder and that any formulation based on such an idea is faulty. When a roach walks through fluoride or any other powder and gets it on his legs and feelers, he will always clean off any powder adhering to these appendages by drawing them through his mouth, and in this way the fluoride gets to the stomach. The roach will do this whether the powder contains a bait or not. Furthermore, where a fine powder is properly applied, the roach will be forced to walk through it to get out to his supply of food and he cannot avoid getting it on his legs, it is held.

AS HAS been pointed out on several occasions, the problems of the insecticide manufacturer and of the professional exterminator as far as roach powder composition are concerned, are widely different. The pest control operator chooses his powder for his own use or the use of his men. He applies it and sees the results of its application. He is an expert in application based on his knowledge of the habits of the insect which he seeks to exterminate. If it is possible to obtain effective results with any given powder composition, the exterminator should be and usually is the one to get these results.

Labor represents the most expensive part of a professional exterminating job, and as a consequence,

(*Turn to Page* 109)

DISINFECTANTS in the Tannery

By Paul I. Smith

DISINFECTANTS have been in fairly regular use in some progressive tanneries for well over forty years, particularly for the control of fermentation in sole leather tanning; control of putrefaction in soaks and the preservation of seasons, finishes, etc. Phenol was the original disinfectant and it is still favored by a number of the more conservative tanners because of its safety in use. It is, however, one of the weakest of disinfectants and cannot be recommended on the count of either efficiency or economy. The use of substituted phenols as antiseptics in the early part of the twentieth century lead to the development of compounds containing both phenol and chlorine for use as commercial disinfectants. Pentachlorphenol is an example of a comparatively recent tannery disinfectant which is proving increasingly useful for many purposes. There is no doubt that the range of commercial disinfectants has increased very considerably during the last five years and their applications cannot now be measured on both hands.

In curing hides and skins, various arsenical preparations are now widely utilized for preventing or limiting insect damage, the growth of moulds or fungi, which causes bad stains, and the growth of putrefactive bacteria and unorganized ferments which dissolve or render soluble the hide substance. For soaks, use is made of high efficiency compounds of a non-corrosive and non-staining character, such as sodium fluoride or alkali - hypochlorite, preferably the latter, which can often exercise a very favorable softening action on hard and obstinate skins. Increasing quantities of disinfectants are also being used for hide or skin disinfection destined to kill the spores of anthrax and the virus of foot and mouth disease or rinderpest.

Mercuric salts have been used in the past for hide and skin disinfection, but the methods employed have frequently resulted in damage to the sensitive protein matter. Present research now favors the use of sodi-

um hydrogen fluoride, and concentrations of 1 part in 10,000 parts of water have been shown by Dr. F. O'Flaherty, Director, Tanners' Council Laboratory, to be effective for the sterilization of hides and skins. Recommendations made to the U. S. Department of Agriculture, Bureau of Animal Industry, which became effective Feb. 1st, 1940, state for the destruction of foot and mouth disease that imported skins and hides be soaked in a solution of sodium hydrogen fluoride, 1 part in 10,000 of water, and that the skin or hide proportion be one part skin or hide to not more than four parts by weight of water, the temperature 20-25° C., and the pH of the solution to be so adjusted that at the end of 24 hours the pH will be 6.2-6.5. This method is known as the Tanners' Council Laboratory Method.

In hide pickles, the addition of a small amount of disinfectant is recommended, especially if it is intended to store the goods or to ship them in the pickled state. W. B. Pleass, who has done a great deal of work on the disinfection of pickles, recommends the addition of 0.01 per cent of beta-naphthol, trichlorphenol and para-nitrophenol, which will prevent the appearance of fungi. Some years ago, Seymour Jones advocated a sterilizing pickle of 1 per cent formic and 0.0002 per cent mercuric chloride. Tanning authorities now seem to agree that para-nitrophenol is the most suitable agent to employ. During the washing process, after the neutralization of chrome stock, some tanners make use of small quantities of disinfectants as an assurance against the appearance of moulds which are particularly liable to appear on single bath tanned leather and not so liable to disfigure double bath tanned goods. The author wonders whether this is due to the presence of a very fine deposit of sulfur on the grain of the leather in the latter case. Beta-napthol is a safe recommendation, but use can also be made of several proprietary disinfectants. The writer considers that the claims of an emulsion of copper naphthenate or an emulsion of a mixture of mercury and copper naphthenate well worthy of consideration. The main difficulty is, of course, to prevent the emulsion from breaking down at very weak concentrations. Sodium naphthenate is also a very useful disinfectant and one also that is reasonably cheap. High grade naphthenic soaps have little smell and, in any case, the faint smell in the aqueous concentrations used is not particularly noticeable.

In a recent article in "Hide and Leather," November 11th, 1939, Dr. Fred O'Flaherty recommended the addition of a small amount of antiseptic to the sawdust used for conditioning chrome and other leather. The additive mentioned is a weak solution of formaldehyde or pentachlorphenol which could be sprinkled on the sawdust before use so as to prevent mould growths on the leather when they are left for eight or more hours in the damp sawdust. It should be noted that fungoid growths are occasionally noticed on leather when dirty sawdust is employed, and when they do occur, they inevitably cause strains and discoloration of the grain surface.

As mentioned before, disinfectants are now extensively employed in the sole leather tannery for the control of fermentation in the handlers and layers, etc. Phenol is widely used for this purpose and apparently gives good results as it is mild in its action and, possessing only very limited solubility, it is fairly safe to use. To increase the efficiency of phenols and cresols, use can be made of approved solution promoting agents, such as the sulfonation products of aliphatic alcohols with 6-10 carbon atoms in the molecule, together with a minor proportion of sulfonation products of aliphatic alcohols having more than 10 carbon atoms. These compounds, which possess both wetting properties and disinfectant power, are described in a patent taken out by Deutsche Hydrierwerke A.-G., B. P. No. 475,809.

Anti-fungi bodies have been recommended as additives to stuffing and fat-liquoring preparations for some years now and there are literally dozens which can be useful in this connection, particularly isothymol, which, although rather expensive, is an exceedingly powerful fungicide and is now being extensively used for the prevention of rancidity in oils. Its effective concentration for the latter purpose is 0.1 to 0.2 per cent. Another little known, but potentially useful additive, is naphthenanilide sulfonate. This possesses useful disinfectant properties and also is able to prevent the precipitation of fatty acids from soaps in the presence of acids. Sodium silicofluoride is another chemical worthy of consideration as an alternative to sodium fluoride which is occasionally found in stuffing mixtures and fat-liquors.

A GOOD deal of interest has recently been taken in the development of a process capable of rendering shoe linings and upper leather antiseptic and immune to the action and unfavorable to the growth of fungi, particularly *Trichophyton Rosaceum*, responsible for the much advertised "Athlete's Foot" and also certain types of bacteria. It has, however, been pointed out that leather as it reaches the shoe manufacturer and also the retail buyer is, if not exactly sterile, in a good condition to withstand the deteriorating effects of bacteria and fungi, provided the made-up footwear is not kept damp, that is, contains at least 14 per cent moisture. Only under very unfavorable conditions of use or storage is the leather likely to be the focus point of attack by fungi or anaerobic bacteria.

Dr. Fred. O'Flaherty has warned tanners that the promiscuous use of many disinfectants may result in law suits for damages brought by people who allege the contraction of various skin affections due to the use of treated leather. This is a warning which cannot be too widely known and is the reason why the writer would recommend a policy of extreme caution towards antiseptic processes of doubtful antecedents. It should be realized that while some disinfectants may apparently produce the effects

(*Turn to Page* 111)

MOTH PROOFING TEST

A STANDARD method for testing the resistance of fabrics or yarns against moth damage is the aim of joint committees of the National Association of Insecticide & Disinfectant Manufacturers, the American Society for Testing Materials, and the American Association of Textile Chemists and Colorists. A tentative test method has been developed jointly by research committees of the last named two associations and this will be discussed at a meeting of committees of the three associations on October 17th in New York. In the meantime, the committee of the N.A.I.D.M., headed by F. W. Fletcher of the Dow Chemical Co., Midland, Mich., desires to secure the reaction and comments of those in the insecticide industry who are interested in the procedure. With this in mind, the method is given herewith. Any comments should be sent immediately to Mr. Fletcher so that they may receive consideration at the joint committee meeting on October 17.

Scope of Tentative Method:

1. This method of test applies to the determination of the resistance to moths of fabrics which contain wool or other hair fibers. The term "moth" shall be construed to include carpet beetles as well as clothes moths.

Test Specimen:

2. (a) An area of approximately 960 sq. mm. (1.5 sq. in.) on each of two specimens of the treated fabric shall be exposed to the action of the larvae.

(b) Treated yarns shall be prepared for test by winding the yarn on a piece of cardboard 25 mm. (1 in.) square. The surface of the cardboard shall be substantially covered by the yarn. Two specimens of each yarn shall be so prepared.

(c) A specimen of the same fabric or yarn untreated shall be exposed under the same conditions, wherever possible. If the untreated fabric or yarn is not available, a pure undyed wool or camel's hair fabric shall be used.

3. (a) The larvae of the black carpet beetle (Attagenus piceus Oliv.) shall be used.

Note.—The larvae of the furniture carpet beetle (Anthrenus vorax Waterhouse) may be substituted in regions where it is prevalent.

(b) All larvae shall be active and approximately the same size. The average weight of such larvae should be approximately 5 mg.

(c) Ten larvae weighing 50 ± 5 mg. shall be used for each specimen.

Procedure:

4. (a) The larvae shall be placed on the fabric to be tested and confined within the specified area. This shall be accomplished by inverting a No. 3 Gooch crucible, having a top diameter of 35 mm. and containing a perforated bottom, over the specimen. The fabric shall be backed by any inedible material such as a metal plate or a stiff cardboard. The crucible shall be held down firmly on the fabric by any suitable means.

(b) In the case of carpets, the sample may be cut to fit exactly within the crucible in order to prevent the larvae from eating their way out of the enclosure. However, this should not be necessary if the crucible is pressed firmly enough against the fabric.

(c) In the case of yarns, the yarn-covered square shall be placed on the backing plate, infested with the larvae, and then confined within the inverted crucible which should rest firmly on the backing plate.

(d) The specimens shall be kept in an incubator having a temperature of 80 ± 2° F. for a period of 30 days.

Results:

5. (a) The extent of the damage to the fabric or yarn shall be determined by visual examination, quantity of excrement deposited and the number of larvae remaining alive.

(b) In the visual examination, the following evidences of damage shall be looked for: (1) holes in the fabric, (2) breaking of fibers, and (3) lodgment of cocoons between the fibers.

(c) The quantity of excrement deposited shall be determined by freeing it from all loose fibers, shells and larvae and weighing. This is accomplished by removing the crucible and holding the fabric, with the exposed side facing downward, over a piece of glazed paper. By grasping the fabric on opposite sides and pulling back and forth between the hands all loose material, excrement and larvae will be collected on the paper. Precautions should be taken that all excrement is removed from the fabric. In the case of pile fabrics and yarns, it is advisable to tap the back of the sample to free it from all adhering excrement. The material collected on the paper shall then be placed in the crucible and by repeated tapping of the crucible the excrement shall be sifted through the perforations and finally weighed on an analytical balance.

(d) The evidences of damage, the number of larvae remaining alive and the weight of the excrement in milligrams shall be reported for each specimen of the treated sample and for the untreated sample.

(e) The fabric shall be considered satisfactorily resistant to moths if a quantity of excrement not over 6 milligrams is deposited by the larvae (Note) provided that under the same conditions a quantity of more than 15 milligrams of excrement is deposited on the untreated sample.

Note.—If the larvae are starved for 2 days prior to the start of the test, the quantity of excrement should not exceed 2 milligrams.

D&O

ESTABLISHED IN 1798

PYRESSENOL #20 ODORLESS

* * * *

A full season of widespread and highly successful commercial use has confirmed the supremacy of Pyressenol No. 20 Odorless in the manufacture of odorless household insecticides. Lower in cost than Pyrethrum No. 20, yet equally effective at the same dilutions, equally as harmless and pleasant to use, and with a special efficiency against roaches, Pyressenol No. 20 Odorless has also proved ideal for making semi-concentrates for use in vaporizers.

CONTRACT PRICE

$3.90 Per Gal.

in 55-gallon drums

Quotation subject to change in accordance with market conditions

Increased production and favorable market conditions permit such attractive contract prices for 1941 as to encourage the use of Pyressenol No. 20 Odorless, even in low-cost sprays where freedom from odor and other more disagreeable characteristics is desirable even if not absolutely essential.

DODGE & OLCOTT COMPANY

180 Varick Street . . . . New York, N. Y.

BOSTON : CHICAGO : PHILADELPHIA ST. LOUIS : LOS ANGELES

Plant and Laboratories . . . Bayonne, N. J.

GERMICIDE TESTING

Comments on Methods and Practical Interpretation of Results

By Dr. Samuel S. Epstein

WHAT with public health campaigns, glaring posters, and newspaper write-ups of medical discoveries and new treatments for specific types of infection, it is small wonder that the public has become germ-conscious. "Sulfanilamide" and "Streptococcus infection" — terms until recently bandied about by only the learned few—appear to have become as much a part of the general vocabulary as "boric acid" and "sore throat." Manufacturers of numbers of commodities have shown their awareness of this trend by offering such items as sterilized tooth brushes, articles packaged and wrapped without having been touched by human hands, and more recently, products which of themselves are claimed to have antiseptic power, such as fabrics, face and hand towels, insoles, paints, bandages, rouge, lipstick, rubber articles of apparel, etc.

When such claims can be made, they naturally bring up a new and intriguing advertising angle. Unfortunately the claims have not always stood up, proved by the fact that government injunctions have been obtained against some of the manufacturers of these articles. If the sanitary and antiseptic angle is worth developing, it should be worth doing on a sound basis. Difficulties encountered with the Federal Trade Commission seem primarily due to a lack of careful bacteriological studies, or if such were made, to a too-free interpretation of the results, sometimes by sales managers or by the producers themselves. Where failure to obtain scientific results or over-optimism with regard to these has led a manufacturer into trouble, he has usually called in costly legal talent to get him out of his difficulties. Extrication may or may not be successful without a harmful effect on his business.

The prevailing confusion as to terminology and the lack of understanding of valid methods may lead a person astray even when he has the best of intentions. According to definitions accepted by bacteriologists, the general term *germicide* is used to designate a substance which has the power to destroy microorganisms of any kind. *Disinfectant* is synonymous with germicide in practical use. An *antiseptic* is considered as inhibiting the growth of microorganisms. Actually if the latter are not growing they must be dying, so that the difference between a germicide and an antiseptic is one of degree and not of kind. If a germicide is sufficiently dilute it is an antiseptic since it kills microorganisms slowly. In common usage a disinfectant is thought of as a germicide applied to inanimate objects, having a high potency so as to destroy bacteria quickly, while an antiseptic is thought of as a weaker germicide which can be applied to living tissue without being too caustic or painful in effect. *Fungicide* is a specialized term used to designate a substance which will kill forms of plant life known as fungi, specifically, molds and yeasts.

Since the government has set up a standard for the activity of disinfectants to be sold for general use to the public, illustrations of how this standard is met will be given. The U. S. Department of Agriculture ruling of 1931 is that such disinfectants must have a strength equivalent to the germicidal efficiency of a 5 per cent solution of phenol against *Eberthella typhi*. How does this relate to the phenol coefficient of a disinfectant? The phenol coefficient is the relative germicidal efficiency of a disinfectant compared with that of 100 per cent phenol against *E. typhi*. The government standard for disinfectants therefore corresponds to a dilution in each case of 20 times that of the value giving the phenol coefficient of the disinfectant, since a 5 per cent solution of phenol is 20 times as dilute as 100 per cent phenol. This strength of disinfectant allows a reasonable margin of safety in use since *Eberthella typhi* and *Staphylococcus aureus* are killed by a 5 per cent phenol solution within 30 seconds. Most infective agents likely to be encountered will be killed, with the possible exception of *Mycobacterium tuberculosis*.

The current standard method for testing the germicidal power of disinfectants is the phenol-coefficient method recommended by the Food and Drug Administration, commonly referred to as the FDA method[1]. This method is applicable to soluble substances, particularly phenol-like compounds. In this procedure 0.5 cc. of a 24-hour culture of *Eberthella typhi* is introduced into each of a series of 5-cc. aqueous dilutions of the disinfectant. After 5, 10 and 15 minutes respectively, 0.01 cc. of mixtures of culture and diluted disinfectant are planted into 10 cc. each of sterile broth. At the same time appropriate dilutions of phenol are tested in a similar manner to serve as a basis of comparison. The value for the

YOUR INSECTICIDE WILL SELL BETTER IN Glass!

—BECAUSE IT STAYS STRONG DOWN TO THE LAST DROP!

Are you looking for an idea to step up the sales of your insecticide? Then consider the possibilities of packing it in glass.

In a modern Anchor Hocking Glass package with a sure-sealing Anchor Improved C.T. Cap your product not only reaches your customer at full strength, but stays strong till the last drop is used. The Anchor C.T. Cap allows no seepage, leakage or evaporation. It cuts customer complaints against loss of strength. It delivers and keeps your product at peak performance.

In addition, this container never rusts, doesn't get dirty. It's always easy to open. It's easy to pour from. It reduces spillage because the customer can see the level of the liquid when pouring. If you've ever watched women, who buy most of the insecticide sold—you'll know how important these points are. Sales resistance drops in this glass package with its easy-off, easy-on Anchor C.T. Cap.

Let Anchor Hocking help you give the sale of your insecticide a lift. Write us or wire.

ANCHOR HOCKING GLASS CORPORATION
Lancaster, Ohio
Closure Subsidiary: ANCHOR CAP & CLOSURE CORPORATION
Lancaster, Ohio and Toronto, Canada

Easy to open—easy to pour—an important point with women—who buy most of your product.

ANCHOR HOCKING GLASS CAPS

-an unbeatable combination

phenol coefficient is obtained from the experimental results by dividing the highest dilution of disinfectant which kills the culture in 10 minutes but not in 5 minutes, by the highest dilution of phenol killing the culture in 10 minutes but not in 5 minutes.

The phenol coefficients of two disinfectants were determined in this way, the results being shown in the accompanying table. Disinfectant A in a dilution of 1 to 400 killed the test organism, *E. typhi*, in 10 minutes but not in 5 minutes. This was the highest dilution which met the requirements. Phenol showed the same killing effect at a dilution of 1 to 90. The phenol coefficient for disinfectant A is obtained by dividing 400 by 90, which gives 4.4. This means that undiluted disinfectant A can be considered to have 4.4 times the germicidal power of 100 per cent phenol. Disinfectant B was considerably stronger than disinfectant A, as it showed the same killing power at a dilution of 1 to 750. Its phenol coefficient would be 750/90 or 8.3.

Having found the phenol coefficients for these two disinfectants, the dilution in which they can be recommended for general use and meet the government standard, can be calculated. Their activity as used should be the equivalent of that of a 5 per cent phenol solution or phenol at a dilution of 1 to 20. The commercial standard is therefore a dilution corresponding to 20 times the value for the phenol coefficient. In the case of disinfectant A this concentration would be 4.4 x 30 or a dilution of 1 to 88. In the case of disinfectant B, the acceptable concentration would be 8.3 x 20 or a dilution of 1 to 166.

These dilutions can be checked by changing them to percentage values. The dilution calculated to meet the F.D.A. criteria in the case of disinfectant A was 1 to 88. This is 1 part of disinfectant in 88 parts of solution, or 1 part of disinfectant plus 87 parts of water, which corresponds to a concentration of 1.136 per cent. The dilution of disinfectant A found to meet the recommended experimental procedure was 1 to 400, which is a percentage concentration of 0.25. The dilution of phenol found to meet the recommended experimental procedure was 1 to 90, or 1.111 per cent concentration. To find the percentage concentration of phenol which the calculated commercial concentration of disinfectant A corresponds to, the following proportion is used:

calc. conc. of dis. A	exptl. conc. of dis. A	calc. conc. of phenol	exptl. conc. of phenol
1.136 :	0.25 =	x :	1.111

$$x = \frac{1.136 \times 1.111}{0.25} = 5.05 \text{ per cent phenol}$$

This shows that the dilution of 1 to 88 for disinfectant A corresponds to a slightly higher germicidal efficiency than that required by the F.D.A. standard of 5 per cent phenol.

Applying the same method of calculation to disinfectant B, a dilution of 1 to 166 corresponds to a percentage concentration of 0.602, a dilution of 1 to 750 to a percentage concentration of 0.133. The proportion is:

calc. conc. of dis. B	exptl. conc. of dis. B	calc. conc. of phenol	exptl. conc. of phenol
0.602 :	0.133 =	x :	1.111

$$x = \frac{0.602 \times 1.111}{0.133} = 5.03 \text{ per cent phenol}$$

Disinfectant B at the calculated dilution also has a slightly higher germicidal efficiency than required by the F.D.A. standard.

The F.D.A. methods do not limit the phenol-coefficient test to the use of one organism when another is more closely related to the intended use. For disinfectants recommended for personal use or for application to wounds, tests should be made with *Staphylococcus aureus* at 37°C. which is about body temperature, and at 20°C. for products to be used externally.

Certain types of compounds, particularly many of the mercury compounds, frequently give high phenol coefficients due primarily to inhibition of growth in subcultures. As an aid in offsetting possible false values, subcultures should contain at least 200 cc. of broth instead of 10 cc., or the usual subculture should be retransferred by carrying at least 0.04 cc. or 4 loopfuls, to a second tube of broth.

Filter Paper Methods

Further F.D.A. methods include the wet and dry filter-paper procedures which are applied to both disinfectants and antiseptics. These methods are suitable for testing substances insoluble or immiscible with water, disinfectants used in high concentrations, water-soluble and other liquid antiseptics remaining on the site of application, and solid or semi-solid antiseptics having only a short time of contact such as soaps, tooth powders and tooth pastes. In the wet filter-paper method, small sterile No. 2 Whatman filter paper squares are impregnated with the test organism and then placed in intimate contact with the disinfectant or antiseptic for various periods of time: 5, 10, 15, and 60 minutes or longer. The paper squares are then transferred to a tube containing 10 cc. of sterile broth, as much as possible of the disinfectant is removed and the squares are retransferred to a fresh tube of sterile broth. Both tubes are incubated at 37°C. for 48 hours, when they are examined for growth.

Disinfectant	*Dilution*	*Time Interval* 5 *minutes*	10 *minutes*	15 *minutes*
A	1 in 300	0	0	0
	1 in 350	+	0	0
	1 in 400	+	0	0
	1 in 450	+	+	0
	1 in 500	+	+	+
B	1 in 600	0	0	0
	1 in 650	0	0	0
	1 in 700	0	0	0
	1 in 750	+	0	0
	1 in 800	+	+	+
	1 in 850	+	+	+
Phenol	1 in 90	+	0	0
	1 in 100	+	+	+

+ = Growth 0 = No growth of test culture

[1] U. S. Department of Agriculture. U. S. Food and Drug Administration Method of Testing Antiseptics and Disinfectants. Circular No. 198 (1931).

BIOGRAPHY OF THE

HOUSE FLY...

(Musca domestica of Linnaeus.) No. 1 in a series of sketches on troublesome pests.

The housefly is found in nearly all parts of the world and because of its power to spread disease is one of humanity's worst enemies. Eggs laid in the fall will hatch in the spring. Usually the pupa, in grub-like form, finds some incubating pile of filth. It comes out of the shell full grown and carries germs of all sorts on its hairy legs and feet. As germs live for some time in the digestive tract of the fly, they may also be dropped on food or utensils in its excrement or in the material discharged from its mouth.

Control with PYREFUME

PYREFUME, the perfected pyrethrum concentrate, when diluted as recommended is death to flies. It also has a tremendous "knockdown and kill" action against other pests. Yet, it has been shown to be relatively non-toxic to animals.

PYREFUME meets performance standards as demonstrated through physiological laboratory tests. Pyrethrins content of PYREFUME is guaranteed . . . stability is assured by the addition of a special anti-oxidant . . . blends clearly and perfectly with usual oil bases . . . no sediment . . . stays clear and is stainless.

NEW LOW PRICES ON PYREFUME

—AVAILABLE ON REQUEST

S. B. PENICK & COMPANY

132 NASSAU STREET, N. Y. **1228 W. KINZIE STREET, CHICAGO, ILL.**

THE WORLD'S LARGEST BOTANICAL DRUG HOUSE

In the dry filter-paper method, the inoculated squares are first dried for 2 days at 37°C. The procedure thereafter is the same as for the wet filter-paper method. The dry filter-paper procedure is particularly suitable for the evaluation of preparations to be used on dry surfaces such as spraying oils and sweeping powders which are sprayed or spread on dry walls, floors, etc.

Standards for Antiseptics

Government standards for antiseptics vary according to the manner in which the product is to be used. Liquid antiseptics recommended for short-time application are required to kill *Staphylococcus aureus* within 5 minutes at 37°C. in accordance with the conditions of the phenol-coefficient method already given. This illustrates the much slower killing power expected of antiseptics as compared with disinfectants. Products which belong in this class are mouth washes, gargles, douches and similar preparations which as used are in contact with the body tissues for short periods of time only. As actually tested, 5 cc. of the liquid antiseptic must kill the bacteria present in 0.5 cc. of a broth culture, or approximately 300-350 million staphylococci, within 5 minutes at 37°C.

Antiseptics which remain on the site of application for long periods of time are required to inhibit the growth of bacteria. Examples of this class of products include antiseptic ointments, pads, dusting powders, and dressings. Two inhibitory methods have been recommended by the F.D.A., the agar-plate method and the agar cup-plate method. In the agar-plate method the usual test organism is *Staphylococcus aureus*. The procedure involves the plating of 0.1 cc. of a 24-hour broth culture with 15-20 cc. of beef extract-peptone agar in a sterile unglazed porcelain-covered petri dish. The inoculated agar is allowed to harden after which the test antiseptic substance is placed in intimate contact with the surface of the agar. Incubation is at 37°C. for 24-48 hours after which time examinations are made for evidence of inhibitory antiseptic action as indicated by the presence of a zone of clear agar around the test substance. The agar is made up of 0.5 per cent of Liebig's beef extract, 0.5 per cent of chemically pure sodium chloride, 1.0 per cent of Armour's peptone for disinfectant testing, and 1.5 per cent of Bacto-Agar (Difco) in distilled water, adjusted to a pH of 7.2-7.4.

The agar cup-plate method is a modification of the agar-plate inhibitory method and is intended for application to products which are liquid at the temperature of the test and for soluble antiseptics, such as dyes, rubbing preparations, and wet dressings. The plate is prepared in the same way as in the agar-plate method except that a circular depression of about 1.5 centimeters in diameter is made in the agar during or after hardening. Six drops of the test liquid or solution are placed in the cup and the plate incubated at 37°C. for 24-48 hours. A clear zone of agar about the cup is indicative of inhibitory properties.

When the agar-plate or the agar cup-plate method is employed to test preparations for use on open wounds or cuts, 10 per cent of sterile horse serum should be added to the agar medium. In both of these methods the agar in the clear zone may be tested for growth by subculture in broth to indicate whether the organisms are dead or merely dormant. Lack of growth in the subcultures would indicate germicidal or killing power within the time interval between the start of the inhibitory test and the start of the subculture, that is within 24-48 hours.

The question as to whether an agar-plate test yielding a clear zone might indicate actual germicidal activity was investigated using a particular type of medicated fabric as the antiseptic agent. By the routine test this gave zones of clear agar more than 5 millimeters in width. From this 24 subculture tests were made. Transfers of 2 pieces of clear agar about 2 mm. square and 3 mm. deep were made into sterile broth. In 6 of these tests the action of the test fabric could be interpreted as germicidal, while in the other 18 tests, the action was inhibitory only. Parallel subcultures from iodine control tests showed no growth. This is intended to bring out the fact that results by the agar-plate method should not be interpreted to the public as indicating germicidal action of the same kind as might be produced by a liquid antiseptic meeting a more drastic test.

On several occasions, results with agar-plate time tests on solid materials such as fabric, paper, rubber, leather, etc., impregnated with germicidal ingredients, were less favorable than results obtained by other workers. Experiments were carried out to determine the effect of slight variations from the prescribed F.D.A. method. When encountering test materials which furled up and consequently were not in good contact with the surface of the agar, sterile glass squares from 1.0 to 1.2 centimeters in size were placed on top. Controls with glass squares used in such tests indicated that contact for 6 hours or longer produced marked but not complete surface and subsurface growth-inhibition of the staphylococci at the area where the glass had been in contact, obviously due to anaerobiosis.

The experimental results are given in the accompanying table and show the effects of varying 3 different factors, one at a time;—the volume of medium, the standard of 20 cc. being compared with 10-15 cc.; the standard of pH 7.3 being compared with pH 6.4; and the standard of an unglazed porcelain petri-dish cover being compared with an ordinary glass petri-dish cover. For the longer periods of contact 6 different types of solid materials treated similarly to render them antiseptic were used.

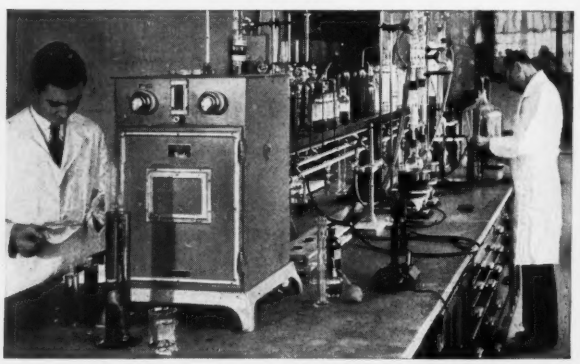
The figures obtained for the areas of growth inhibition show that using less than 15 cc. of medium led to higher antiseptic values. At a pH of 6.4, other conditions being the same, the antiseptic values obtained were higher than at pH 7.3. Use of ordinary glass petri dish covers led

How "Multiple Management" Helps Produce Finer Pyrethrum and Derris Insecticides

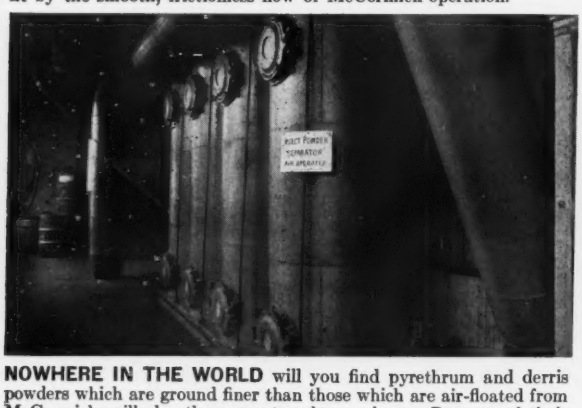
NO FEAR OF LAYOFFS haunts the great McCormick plant at Baltimore. Under an unique plan of "Multiple Management," McCormick employes share the problems and responsibilities of the business. In turn, they are rewarded in many ways for using brains and taking pains to make certain that McCormick insecticides and other products are the finest you can buy.

NEW WAYS OF DOING THINGS—making better products, giving better values, providing better service—are among the constant quests of the McCormick Factory Board, made up of alert, able factory men who are "on the way up." Junior and Sales Boards, elected from office and sales forces, also help supply the Company with ideas for keeping McCormick products and service "tops."

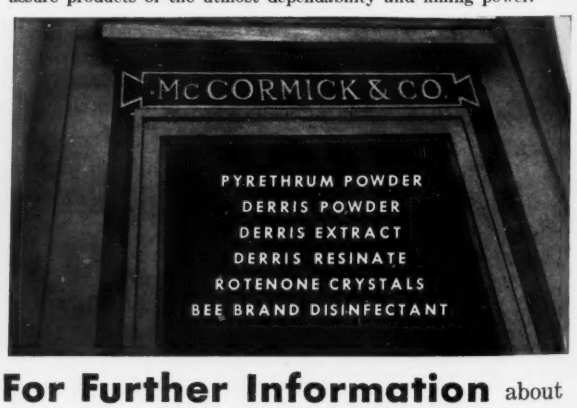
UNDER "MULTIPLE MANAGEMENT," by helping the Company increase efficiency all down the line, McCormick employes have helped work out their own job security. They work a 5-day, 40-hour week, are assured 48 weeks' work a year, get vacations and 8 holidays a year with pay, share in earnings of the business. Customers benefit by the smooth, frictionless flow of McCormick operation.



IT IS SCARCELY STRANGE that, with every employe on the alert and making suggestions, McCormick is quick to discover and adopt the latest manufacturing and laboratory methods and equipment. The McCormick insecticide laboratories, equipped for complete analytical and biological tests, are among the finest in the industry. Daily tests assure products of the utmost dependability and killing power.



NOWHERE IN THE WORLD will you find pyrethrum and derris powders which are ground finer than those which are air-floated from McCormick mills by the separator shown above. Because of their microscopic fineness, these powders provide more killing particles to the ounce, stick more closely to the vital parts of insects, insure a quicker, surer kill. McCormick workers guard this high quality carefully. "Multiple Management" teaches them that good products win steady customers—and steady customers make steady jobs.



For Further Information about McCormick Pyrethrum Powder, Derris Powder, or other products listed above, write to: The McCormick Sales Co., Baltimore, Md. In Canada: McCormick & Co. (Canada), Ltd., 454 King St., West, Toronto, Ont.

to higher antiseptic values than obtained under similar conditions with the standard unglazed porcelain petri-dish covers. It is thus shown that each of these 3 deviations from the prescribed experimental procedure led to higher antiseptic values, that is, to more favorable results, than would be obtained under the standard procedure. This was true with respect to the rapidity of onset of growth inhibition and with respect to the width of zones of clear surface agar. The tabulated figures emphasize the importance of following the F.D.A. procedure rigidly as to details.

EFFECT OF pH OF MEDIUM, TYPE OF PETRI DISH COVER, AND AMOUNT OF MEDIUM USED, ON THE INHIBITION OF SURFACE GROWTH OF STAPHYLOCOCCUS AUREUS BY ANTISEPTIC SOLID MATERIALS IN AGAR PLATE TIME TESTS

Time of Contact of Test Square (10 mm.)	Test Sample	Medium Adjusted to pH 7.3				Medium Adjusted to pH 6.4			
		20 cc. medium per plate		10-15 cc. medium per plate		20 cc. medium per plate		10-15 cc. medium per plate	
		P cover	G cover	P cover	G cover	P cover	G cover	P cover	G cover
		Width of Area of Complete Surface Growth-Inhibition in Millimeters							
5 min.	A	0	11	10	12	11	11	13	14
	B	0	0	—	—	0	0	—	—
	C	0	0	—	—	0	0	—	—
	D	0	0	—	—	0	0	—	—
15 min.	A	13	14	14	15	15	15	15	15
	B	0	0	—	—	0	0	—	—
	C	0	0	—	—	0	0	—	—
	D	0	0	—	—	0	0	—	—
30 min.	A	13	16	14	17	16	18	16	19
	B	0	0	—	—	10	11	—	—
	C	0	0	—	—	0	10	—	—
	D	0	0	—	—	10	12	—	—
1 hr.	A	14	17	16	18	17	19	19	21
	B	10	11	—	—	11	13	—	—
	C	10	12	—	—	11	13	—	—
	D	10	12	—	—	12	14	—	—
	E	16	18	—	—	19	21	—	—
	F	13	14	13	15	15	18	17	19
3 hrs.	A	15	17	17	18	18	20	20	22
	B	11	13	—	—	12	14	—	—
	C	11	14	—	—	13	16	—	—
	D	10	11	—	—	12	14	—	—
	E	17	21	—	—	20	22	—	—
	F	13	15	14	16	16	19	17	19
24 hrs.	A	18	20	—	—	21	23	—	—
	B	12	13	—	—	15	16	—	—
	C	11	13	—	—	13	15	—	—
	D	12	14	—	—	15	16	—	—
	E	23	25	—	—	26	28	—	—
	F	14	17	15	16	18	20	19	22

Medium—Beef-extract agar, F.D.A. formula.
P cover—Unglazed porcelain petri dish cover.
G cover—Ordinary glass petri dish cover.

Methods for Fungicides

Effective agents for the destruction of molds and yeasts are required in the food industries to minimize spoilage, and in medicine for the killing of a number of pathogenic molds causing skin diseases, in particular for the treatment of "athlete's foot," epidermophytosis or ringworm. It has been suggested that preparations for the treatment of "athlete's foot" be tested against 4 organisms, *Epidermophyton interdigitale*, *E. rubrum*, *E. gypseum* and *Trichophyton rosaceum*, rather than just one.[2] In a study and diagnosis of 246 cultures obtained from actual patients, 43.1 per cent were identified as *Epidermophyton interdigitale*, 21.1 per cent as *Trichophyton rosaceum*, 31.3 per cent as *Epidermophyton cruris* or *E. floccosum*, and 4.5 per cent were unidentified.[3] Over 90 per cent of the cultures isolated at the New York Skin and Cancer Clinic have been identified as *Epidermophyton interdigitale*.[4] Of 47 cultures isolated by the author during the past two years, over 87 per cent were identified as *E. interdigitale*.

The agar-plate method and the agar-cup plate method have served in this laboratory to furnish adequate tests for preparations designed for application to lesions of "athlete's foot". One cc. of a heavy spore suspension of *Epidermophyton* (*Trichophyton*) *interdigitale* and one cc. of a heavy mixed spore suspension of 3 to 4 recently isolated cultures from active cases were plated with 20 cc. of Sabouraud's agar in glass-covered petri dishes to minimize evaporation. Sabouraud's agar contains 1 per cent of peptone, 4 per cent of dextrose, and 1.5-2.0 per cent of agar-agar. The inoculated medium was allowed to harden. The agar-plate method is suitable for solid preparations such as ointments and powders, which are tested by applying the preparations to one-centimeter sterile squares of fabric cut from the soles of white socks. The treated fabric squares are placed in contact with the surface of the agar culture for various periods of time.

With liquid preparations either the agar-plate or the agar-cup plate method can be used. For the former, fabric squares are immersed for 1 minute in the fungicidal liquid, excess liquid is removed by blotting onto sterile filter paper, and the squares are applied to the surface of the agar for various periods of time. Incubation is at 25°C. for 5 days or until good growth on control plates is observed, or at room temperature in the dark for 8-10 days. Zones of clear agar at least 5 millimeters in width with contact for 1 to 3 hours are considered indicative of the preparation having definite fungiostatic properties against the test organism. In the agar-cup plate method, a disc is removed from the hardened agar by means of a sterile cork borer 1.5 centimeters in diameter. Six drops of the fungicidal liquid are placed in the cup. Incubation is the same as in the agar-plate method but zones of clear agar

(*Turn to Page* 109)

[2] G. F. Reddish and E. Burlingame, Druggist Circular, June issue, 1938.

[3] R. T. Legge, L. Bonar and H. J. Templeton, Archives of Dermatology and Syphilology **27**, 12-24 (1933).

[4] Private Communication.

Evaluating INSECTICIDE ODORS

By J. C. Booser

CONFRONTED with the problem of selecting suitable odors for a line of liquid spray insecticides, a study was made and a procedure devised that it is believed may be of interest to both manufacturers and users of such products. The method was successfully employed to evaluate about twenty-five odors and several so-called neutralizing agents in various combinations of regular oil bases, deodorized bases, different types of pyrethrum concentrates and synthetic insecticidal principles.

The procedure was developed along the lines of a performance test that would be comparatively simple to perform, and not involve the use of expensive apparatus, yet give results that would have practical value. The fact that it is based on performance renders it of value to large users of this kind of insecticide for judging the odor characteristics of various products offered.

The logical approach in devising such a method was first to determine what factors or characteristics must be evaluated. Before actual testing was attempted it was apparent that four characteristics would surely have to be considered.

1. Odor of the insecticide in the container.

2. Character of the odor when the product is sprayed.

3. Persistence of the odor after spraying.

4. Permanence of the odor in storage.

With these factors in mind, some initial tests were made and it then became evident that additional characteristics required evluation. These were:

5. Initial masking power of the odor.

6. Continuity of masking power.

7. Continuity of odor character.

8. Tendency to offset traces of irritation in certain cases.

With this list of characteristics in mind, the next step was to devise a method that would permit approximate evaluation of all eight characteristics. It was also essential that the procedure be simple, inexpensive, fairly rapid, and parallel actual usage conditions as closely as possible.

Equipment

After considerable experimentation the following method was evolved.

Equipment and space required:

1. A small room remote from interfering odors, the cubical contents to be from 200 to 600 cubic feet. The ceiling height should be average say between 8'-6" and 10', and the walls smooth and of a material that will stand repeated cleaning with a dampened mop. It should have at least one window to facilitate ventilation, and any hangings, furniture, or other objects upon which the spray might settle should be removed to simplify the clearing out of residual odors after each test. In developing the method a room five feet square with an 8' 6" ceiling was used. The walls and ceiling were unpainted plaster and there was one small window.

The advisability of using the regular Peet-Grady chamber (216 cu. ft.) is problematical chiefly on account of the low ceiling which would defeat one desirable object of the procedure, namely, to parallel actual application as closely as possible. The cubical contents, 216 cubic feet, would be ample and the ease of cleaning the interior surfaces and sweeping out residual odors with the exhaust system would all be in favor of the use of the chamber. The limited availability of Peet-Grady chambers would prevent its widespread use for evaluating odors even should further experiments prove it to be practical for this purpose.

2. An average quality hand sprayer ordinarily used to apply insecticides of this kind was used. The hand type was chosen for two reasons. First it is lower-priced than a power sprayer, and secondly, it is less efficient and therefore the droplet size in the mist produced will undoubtedly be larger. It seems reasonable to assume that this larger dorplet size would have a tendency to accentuate the undesirable odor characteristics of products being tested. Therefore to simulate what is believed to be the poorer method of application the hand sprayer was chosen. The sprayer used in this particular series of tests was a small size, low priced gun with a glass bowl of about 100 c.c. capacity.

3. A graduated cylinder of about 100 c.c. capacity. The common 4 ounce graduate with a cubic centimeter scale is most convenient and readily obtainable.

4. A motor driven fan to hasten the removal of residual odors from the test room.

5. An ordinary long-handled mop to remove accumulation of spray residue from the walls and ceiling of the test room.

6. Small containers preferably of the kind used to package the product.

Procedure

Measure 1 c.c. of the sample for each 16 cubic feet of space in the test room which is approximately the same concentration used for determining killing power in the Peet-

Grady chamber. For example when testing in a 6′ x 6′ x 9′ room containing 324 cu. ft., 20 c.c. of sample should be sprayed.

The room should be free from any odor, then after closing windows and door spray the insecticide uniformly around the top portion of the room. During and after the spraying operation make the following observations.

1. While spraying:

(a) Note if odor is pleasing.

(b) Note the degree to which the odor of the insecticidal principle and base is masked or neutralized.

(c) Note any tendency toward a tingling sensation in the nostrils or smarting of the eyes.

2. Repeat these same observations at the following intervals after spraying is completed: 2, 5, 15, 30, and 60 minutes.

The observer should leave the test room between observations keeping away from exposure to other odors of any kind. By so doing it was noticed that more clearcut and definite recognition of the odor characteristics resulted. To avoid dilution with outside air such exits and subsequent entries should be made as quickly as possible. It is also desirable to have a second observer check the first operator during the progress of the test.

At the end of 60 minutes, which might be termed an arbitrary end point, the windows and door should be opened, the fan started, and the ceiling and walls gone over with a damp mop. Paper was used on the floor and removed after each test.

Odor In the Container

Place samples of the insecticides under examination in small containers of the same type that is used to package the product. Identify by a letter or number and pass these blinded samples around to at least three persons and ask them to signify the order of desirability in which they would arrange them after observing the odor by simply removing the container top and smelling the contents. Get their reaction as to whether they can detect any underlying objectionable odors that are not covered by the masking agent. In the series of tests made in this instance opinions were obtained from five persons and the agreement found in their ranking of the blinded samples was rather surprising.

Permanence of Odor In Storage

This factor is of importance due to the fact that under proper packaging and storage conditions surplus stock of insect sprays can be carried over from one season to another with assurance that their toxic effectiveness on insects will not be impaired. It is necessary therefore that the odorant used shall have sufficient permanence to retain all the desirable characteristics over a reasonable length of time.

To determine properly this characteristic, samples of insecticide should be examined after a predetermined period for retention of the original odor and masking characteristics. In this series of tests out of 75 formulas stored for one year, only five were found to have deteriorated to a noticeable degree. While this part of the procedure would be impractical for the buyer of these products due to the time element involved, it would nevertheless be of use to the manufacturer of odorants and sprays who recognizes the importance of continuously conducting systematic studies on new odorants.

Interpretation of Requirements

Throughout this series of tests the eight characteristics were judged on what is believed to be a reasonable and practical basis. The following requirements were established at the time initial tests were made.

1. The odor of the finished insecticide in the container shall be pleasing and shall completely mask all objectionable odors. Observations to be made by at least three persons.

2. The odor of the insecticide when sprayed in the stipulated manner and concentration shall be pleasing.

3. The odor after spraying shall not persist more than 60 minutes. Dissapation within 20 minutes would be desirable, but none of the products tested met such a requirement so a reasonable allowance had to be made.

4. The odor shall retain original characteristics in the insecticide solution for at least 12 months.

5. The odor of the insecticide when sprayed shall completely mask all objectionable odors present in the product.

6. The masking power shall last throughout the entire period over which the odor persists.

7. The pleasing character of the odor as sprayed shall last throughout the entire period over which the odor persists.

8. The masking power of the odor shall be sufficient to offset any tingling sensation in the nostrils or smarting of the eyes when the insecticide is sprayed.

It is significant to note that only 5 per cent of the samples in the group tested met all eight requirements, and 50 per cent failed on requirement 3 only which in some cases might warrant acceptance as a satisfactory product.

Comments

An unexpected phenomenon was noticed during this study. It was observed that there was a marked relationship between masking power and the elimination of slightly irritating characteristics peculiar to certain types of sprays. Given two odors one of which completely masked the insecticidal principle, the other with a masking power just a trifle short of covering the principle, the former produced better results. The observer's reaction was that the degree of reduction was all out of proportion to the relative masking powers of the two odorants. The one that completely masked the principle eliminated practically all of this physiological effect, whereas the other odorant did not suppress the aforesaid effect to near the vanishing point as might be expected. In all the cases observed the irritating effect was quite pronounced but of course the reduction was greater than in those samples

(*Turn to Page* 123)

SOAP AND SANITARY PRODUCTS

BOOKS

FOR YOUR LIBRARY

Modern Soap Making, by Dr. E. G. Thomssen and C. R. Kemp. The first entirely original American book on soap manufacture in several years. Thoroughly covers every phase of soap manufacture and glycerin recovery. Written by practical soap men . . . a truly practical book. Chapter headings: Raw Materials; Machinery and Equipment; Soap Making Methods; Soap Products: Glycerin Recovery and Refining; Analytical Methods; Appendix with reference tables, etc. 540 pages. $7.50 per copy in U. S. Add 50 cents for foreign postage.

Henley's Twentieth Century Book of Recipes, Formulas and Processes. A handy reference book listing 10,000 miscellaneous formulas, including special sections for soaps, polishes, insecticides, etc. 800 pages. $4.00.

The Industrial Chemistry of Fats and Waxes, by Hilditch. A study of the fats and waxes in relation to their use in industry. 450 pages. $7.50.

Hydrogenation of Organic Substances, by Ellis. Latest revised edition of this well-known book, pre-eminent in the field of hydrogenation. 990 pages. $15.00.

Pyrethrum Flowers, by Gnadinger. A complete compilation of all known facts on pyrethrum; its history, sources, evaluation, chemistry and uses. The problems involved in the manufacture of pyrethrum products are given thorough and lucid exposition. 396 pages. $5.00.

"Soap and Sanitary Chemicals". Bound volumes for years 1927-28, 1937 and 1939 available at $12.00 each.

Soap Blue Book, A Buyer's Guide, Catalog and Business and Technical Reference Book. 240 pages. $1.00.

Vegetable Fats and Oils, by George S. Jamieson. 444 pages. An American Chemical Society Monograph. Covering classification, occurrence, properties, analytical methods, etc., of vegetable oils, fatty acid and other derivatives; also production and refining methods. $6.50.

Chemistry of Laundry Materials, by D. N. Jackman. A new book for the laundry operator, containing valuable information on the chemistry of laundry materials. Discusses alkalies, soaps, bleaches, starches, also the newer detergents, synthetic soaps, etc. 230 pages. $2.50.

Laundry Chemistry, by Harvey. A practical book dealing with basic principles of laundry chemistry. Of use to suppliers of laundry materials as well as laundry operators. $1.75.

Our Enemy—The Termite, by Snyder. The termite is treated from the economic as well as the entomological point of view in this book based on the author's 26 years of study of termites and methods for their control. Practical control methods and termite proof construction are discussed in detail. 196 pages. $3.00.

202 Common Household Pests, by Hartnack. Discusses North American household pests. Excellent book for manufacturers of insecticides and for pest control operators. 300 illustrations in 352 pages. $3.75.

Owing to the large number of books supplied it is impossible to open accounts on individual book orders or to supply books on approval. Please send check with order.

MAC NAIR-DORLAND CO.

254 West 31st Street **NEW YORK CITY**

Roach Powders

(*From Page* 94)

operators cannot afford to fool around with materials of questionable effectiveness. Their operations must get results. And it is probably for this reason chiefly that the majority of exterminators, considering all phases of roach control, lean so heavily in the direction of sodium fluoride and upon not infrequent occasions use it in places where they know its application may be dangerous.

The problem of the manufacturer of packaged roach powder for retail sale is a different one. Even if he puts out the finest product in the world, it may prove to be ineffective because of misuse. The American public is notorious for its refusal to read label directions and roach powder is no exception. At the same time, if a consumer buys a can of roach powder and uses it as his imagination best dictates, and the roaches continue to frolic nightly in and about the kitchen, he merely makes a mental note that the product is no good, and tries some other brand. There is the loss of a customer for the original manufacturer, but no loss of his time or materials as in the case of a pest control operator. The manufacturer is not in direct contact with the customer as is the exterminator, and the demand for results is less imperative. The manufacturer, however, has the problem of packaging and especially labeling to contend with, the latter becoming increasingly serious as time goes on.

(*To Be Concluded*)

Germicide Testing

(*From Page* 105)

in excess of 8 millimeters are considered indicative of fungiostatic properties.

In both methods, pieces of agar at least 3 millimeters away from the test material or cup may be transferred to agar slants 10, 20, 30 and 60 minutes after the start of the test. Lack of growth on slants may be considered as an indication of fungicidal action. Controls with 70 per cent alcohol should at all times show growth on slants comparable with usual transfers.

The bacteriologist who has to do with practical applications sometimes needs to devise his own tests to meet special conditions or types of products. A few of these will be considered.

Self-Sterilizing Fabrics

The following test was developed for application to fabrics which are claimed to be sterile as the result of chemical treatment: A number of 1-centimeter squares of sample material are placed in sterile petri dishes for 1 hour and are then planted into a series of tubes of sterile broth. Incubation is at 37°C. for 4 days and at room temperature for 7 days, after which the tubes are examined for growth of bacteria.

Fabrics claimed to be self-sterilizing as the result of chemical treatment are also cut into 1-centimeter square samples. The squares are placed in sterile petri dishes for 1-2 hours. One drop from a sterile standard 1-cc. pipette, of a 24-hour broth culture of *Staphylococcus aureus* at a dilution of 1 in 100, is deposited on each of a number of sample squares in separate sterile dishes. After 1, 2, 3 and 4 hours the numbers of viable organisms are determined by the usual bacteriological procedure. Control tests are made in parallel on untreated fabric. The treated fabric is then subjected to a similar test in which a saline spore suspension of *Bacillus subtilis* is used in place of the staphylococcus culture.

Antiseptic Pigmented Products

Paints and other pigmented materials have been offered with a claim of possessing antiseptic value. Some of the suggested methods for testing paints are inadequate since they do not allow for tests after the paint has been permitted to dry for definite periods of time. Two technics[5] overcome this difficulty. One method consists in the deposition of large numbers of *Staphylococcus aureus* or *Eberthella typhi* over a square inch of tin which has been painted with the sample to be tested. After contact for 24 hours, the dried bacterial culture is rinsed with 1 cc. of sterile saline solution and a definite amount transplanted to a tube of sterile broth. In the other method, painted glass rods are immersed in test tubes containing 4 cc. of saline solution and 500 million bacteria. After 6 hours, the rods are removed and 0.2 cc. of liquid is placed on the surface of nutrient agar plates. Lack of bacterial growth is considered evidence of germicidal power. Control tests are run in parallel with ordinary commercial paints. One worker,[6] applying this general method, found that 2 out of 10 ordinary commercial paints exerted some germicidal effect after drying for 6-7 weeks.

Simple and rapid technics which can be applied to paints and other pigmented products including rouge, lipstick and finger-nail polish cover both inhibitory and stronger germicidal action.[7] To demonstrate the growth-inhibiting property of paint against yeasts and bacteria, 1 cc. of a 1 in 20 dilution of liquid culture or heavy saline suspension from an agar growth is plated in a sterile petri dish with 20 cc. of a 2 per cent appropriate agar medium. After careful mixing of the culture and medium and just prior to solidification, 1, 2, 3 or 4 glass rods 20 to 40 millimeters in length and about 11 mm. in diameter, painted and air-dried for stipulated periods of time, are imbedded in various sections of the seeded agar. Incubation is at optimum temperatures of growth for the necessary periods of time, after which observations are made for the presence of a zone of clear agar around the painted rod. Such zones are judged an indication of the existence of an inhibitory or antiseptic property.

To determine inhibitory action against mold growth, 3 cc. of 0.5 per cent dextrose—0.5 per cent flour solution containing approxi-

[5] S. Wetchler, A. Lewis and F. Battline. Paint and Varnish Production Manager, **14**, 12-18 (1936).

[6] E. Valentine. Proc. Biol. Med. **34**, 166-170 (1936).

[7] S. S. Epstein. Food Ind. **9**, (7) 386 (1937); Ibid. **9**, (9) 513; Am. Brewer **9**, (9) 41 (1937).

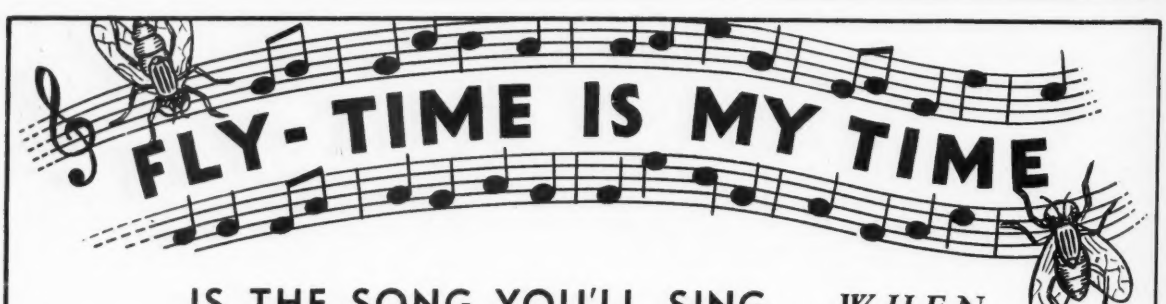
THREE CHEERS for AMERICA'S FAVORITE

"ALL AMERICAN GYM FINISH"

APPROVED BY MFMA • ENDORSED BY COACHES • PRAISED BY PLAYERS

FOR THE GYM FINISH THAT ALWAYS GIVES 100% SATISFACTION WRITE TODAY TO:

T. F. WASHBURN COMPANY

2244 ELSTON AVENUE CHICAGO, ILL.

IS THE SONG YOU'LL SING... *WHEN*

DEO-BASE

Reg. U. S. Pat. Off.

IS THE CARRIER FOR YOUR FLY SPRAYS.

ALL YOUR LIQUID INSECTICIDES MADE WITH DEO-BASE CAN BE SOLD EVERYWHERE FOR USE ANYWHERE.

L. SONNEBORN SONS, INC., NEW YORK

CHICAGO • BALTIMORE

Refiners of White Mineral Oil & Petrolatum
Refineries: Petrolia & Franklin, Pa.
Southwestern Distributors: Sonneborn Bros., Dallas, Texas
Eastern Canadian Distributors: Chas. Albert Smith, Ltd., Toronto
STOCKS CARRIED IN PRINCIPAL CITIES

LOS ANGELES • PHILADELPHIA

mately one million *Aspergillus* or *Penicilium* spores per cc. are poured into a petri dish, the inner part of which has been painted with one coat of paint and air-dried for a stipulated period of time. The mold inoculum is distributed as uniformly as possible, the dish covered and kept at room temperature in the dark indefinitely for observation of growth.

Determination of germicidal power is made by immersing painted glass rods 12 to 12.5 mm. in diameter and about 140 mm. in length, into culture tubes of 13.5-14 mm. internal diameter, containing 2.0 cc. of saline suspensions of the test culture. The initial seeding is from 1,000-3,000 cells per cc. After various time intervals 1 cc. is plated in the usual manner. The rate of killing action under the conditions of the test can be ascertained by this method.

To evaluate the sanitary quality of a surface coated with special germicidal paint, under practical conditions, a count is made of the microorganisms recovered by swabbing a definite area of the painted surface to be tested. This count is compared with that obtained by swabbing a similar area under approximately similar conditions, coated with a general-use paint. This gives results in practical terms and shows what claims can be justified for the special product. Such results have the advantage of being easily explained to the nonscientist.

Disinfectants in the Tannery

(*From Page* 96)

desired, their value cannot be properly assessed until they have been in service for some months. This applies particularly to mercury compounds which have a cumulative toxic action. While immediate effects may be negative, continuous contact with even traces of the poison can, under certain conditions, produce irritation which, on aggravation, may lead to the development of septicaemia.

The toxicity index of the germicide, the ratio of the highest dilution of the germicide which prevents growth of embryonic tissue to the highest dilution of compound required to destroy the test organism in 10 minutes (Dr. Cecil G. Dunn in paper read before Laboratory Section, Mass., Public Health Assn., 1939) may be favorable and lead one to suppose that the antiseptic would be perfectly safe in use, yet here again the question of idiosyncrasy creeps in. It is a fect that some people are highly susceptible to traces of certain poisons and mercuric salts are offenders in this respect. In spite of the danger attached to the use of mercury compounds, Dr. O'Flaherty reports that phenol-mercury acetate has given good results as a fungicide in concentrations of 1 in 500,000 and he considers that it or its compounds offer some promise.

While not wishing to damn the claims of so-called antiseptic leather, it appears to be rather too early in the day to put forward any but the most modest claims, although it must be obvious to all that the production of a 100 per cent germproof leather would be of considerable value. Already a number of promising new antiseptic bodies are being tested and the writer is hopeful that considerable progress will be made. It seems very likely that a future development in the direction of germproofing leather will be its treatment with special compounds, which will render it more or less waterproof and suitable for exhaustive dry cleaning without injury in any way. It should, of course, be realized that dry cleaning with chlorinated solvents or petroleum does not impart any definite antiseptic, but it would, of course, remove sweat and sweeten up the leather very considerably.

Another development may make use of chemicals which have found a use in the mothproofing of keratinous materials. Of interest in this connection is a double salt of chromium fluoride and sodium antimony fluoride, which is apparently quite economical, and the treated material, textile in this case, is fast to washing, the chemical being retained after most exhaustive trials. The ideal to be aimed at is surely something after the type of the Eu'an process developed by the I. G. Farbenindustrie, which makes use of a colorles acid dye (Eulan N) containing no chromophore, but with a great affinity for wool fibre. This treatment renders the material unfit for consumption by moth larvae. What is needed is a process which renders the grain of the leather completely unsuited for the growth of fungi or bacteria. Even if germproofing were 100 per cent efficient, the sceptic might well remind us that even by making the shoe lining completely unreceptive to fungi and anaerobic bacteria, this will not prevent its absorption of sweat and the eventual smelliness of the shoe, but this may, of course, be greatly postponed as the result of the treatment.

Germicidal Preparations

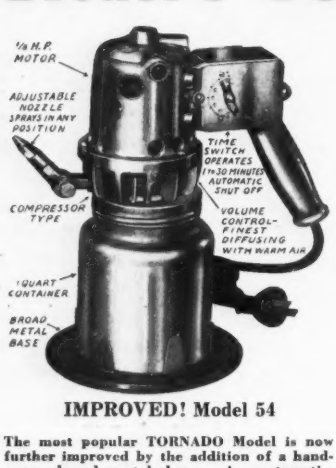
The activity of preparations containing *para*-chloro-*meta*-xylenol, isothymol, and chloroisothymol, respectively, with essential oils, particularly pine and ti-tree oils, was determined by the Rideal-Walker test with *B. typhosum* and *S. pyogenes aureus*. Increasing the amount of essential oil in the mixture increases the activity toward *B. typhosum*, but causes a pronounced decrease toward *S. pyogenes aureus*. For activity toward the latter the amount of chlorinated phenol must be not less than one-third that of the oil. The odor of the oils is altered considerably by the presence of large amounts of chlorinated phenols.

B. typhosum is not recommended as the sole organism for the Rideal-Walker test for determination of the relative efficiency of preparations containing essential oils, particularly when they are used very dilute for skin sterilization. *S. pyogenes aureus* is advocated as a more reliable test organism. Q. Moore and J. N. Walker. Pharm. J. **143**, 507-9.

Carpet Beetle Control

Diamylphenol as well as high concentrations of rotenone have proved effective as contact insecticides in the control of carpet beetles. H. E. Jennings. *Pests* 8, No. 5, 10-12 (1940).

BUILD UP *YOUR* INSECTICIDE SALES
with
Breuer's TORNADO Electric Sprayers


1/8 H.P. MOTOR
ADJUSTABLE NOZZLE SPRAYS IN ANY POSITION
TIME SWITCH OPERATES 1 TO 30 MINUTES AUTOMATIC SHUT OFF
COMPRESSOR TYPE
VOLUME CONTROL-FINEST DIFFUSING WITH WARM AIR
1 QUART CONTAINER
BROAD METAL BASE

IMPROVED! Model 54

The most popular TORNADO Model is now further improved by the addition of a handsome, broad metal base. An automatic, compressor-type sprayer of highest quality at a moderate price. 1/8 H.P. GE Universal Motor; one quart capacity; thirty-minute automatic time switch; adjustable nozzle for spraying at any angle; air volume control to regulate density of spray. Approved by Underwriters' Laboratories.

It's no accident that Breuer's TORNADO Electric Sprayers are featured by practically all leading Insecticide Manufacturers. These firms have proven through experience that Breuer's exclusive warming action does give better results from their liquids; that Breuer Sprayers are easier to sell; and that they stay on the job, bringing in reorders for insecticide season after season.

Seven models to meet every requirement—1/8 to 1/3 H.P.—one pint to one gallon capacity—compressor and fan type—automatic and toggle switch models.

Write today for full details and our attractive discounts to the insecticide industry.

1/3 H.P. G.E. MOTOR
TIME SWITCH OPERATES 1 TO 45 MINUTES AUTOMATIC SHUT OFF
ADJUSTABLE NOZZLE SPRAYS IN ANY POSITION
VOLUME CONTROL FINEST DIFFUSING WITH WARM AIR
COMPRESSOR TYPE
1 GALLON CONTAINER

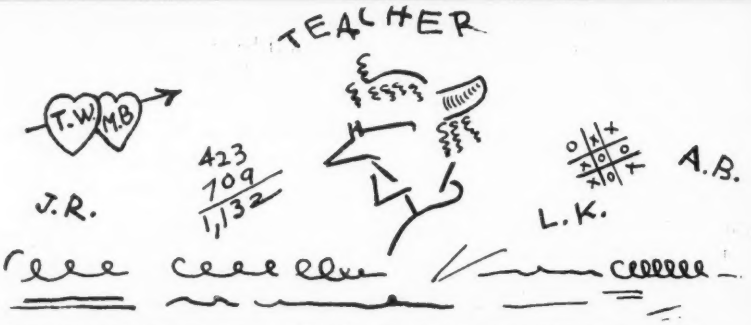
Model 36

A powerful, automatic, compressor-type sprayer for efficient spraying of large areas. 1/3 H.P. GE Universal Motor; one gallon capacity. Adjustable nozzle; air volume control; thirty-minute automatic time switch. Approved by Underwriters' Laboratories.

BREUER ELECTRIC MFG. CO.

5118 N. RAVENSWOOD AVE. *We do not sell insecticides. Our business is manufacturing sprayers. Patented in U. S. A. and Foreign Countries.* CHICAGO, ILLINOIS

THESE ARE THINGS YOU FIND ON SCHOOL WALLS



BUT CLEAR WATER WASHES THEM ALL AWAY WHEN THE WALLS ARE PROTECTED WITH PHANTOM FINISH

Phantom Finish is the answer to a long-standing need in schools and other public buildings for a means of removing heel marks (rubber burns), oil and ink stains, pencil, crayon marks, and lipstick from painted walls, without removing part of the paint along with the marks and stains. Phantom Finish keeps painted walls looking new, and saves many a repaint job.

Clear water is all you need to clean a wall treated with Phantom Finish. No cleaning agents whatever are required. After a wall has been treated with Phantom Finish, heel marks can be washed away with the swish of a sponge. And even ink spots disappear with a clear water rinse. Soiled spots around electric light switches, telephones, and drinking fountains are easily cleaned, simply by wiping the soiled areas with a cloth dipped in clear water, and refinishing the painted wall with Phantom Finish to give continued protection.

Phantom Finish is easily applied with a large paint brush and dries in about twenty minutes. One gallon of Phantom Finish covers about 1,500 square feet. Colorless, odorless, and transparent, Phantom Finish is absolutely harmless to the finest painted surfaces, and never discolors with age. It contains no nitrogenous substances which are subject to putrefaction, and is therefore stable indefinitely and can be stored for long periods of time without danger of deterioration.

For further information and prices, write us on your letterhead.

Phantom Finish is manufactured exclusively by

HIGLEY CHEMICAL COMPANY DUBUQUE, IOWA

News.....

Change Insecticide Hearings

The method for holding hearings under the Insecticide Act of 1910 by the Department of Agriculture was changed as of September 10. Notice to the effect that Regulation No. 4 of the regulations covering the enforcement of the Insecticide Act had been revoked was published in the "Federal Register" of Sept. 11. The revocation of this regulation which covered the holding of hearings locally throughout the country at offices of the Food & Drug Administration in the case of violations of the Insecticide Act, was occasioned by the removal of the Food & Drug Administration out of the Department of Agriculture. The Agricultural Marketing Service, Insecticide Division, which now has jurisdiction over enforcement of this Act, has no local offices out about the country and consequently is not equipped to hold hearings in the field.

According to officials of the Agricultural Marketing Service of the Department of Agriculture, citations for violation of the Insecticide Act will now be made by letter and a reply by correspondence, instead of by personal appearance, will be permitted. This is to avoid unnecessary hardship on manufacturers located long distances away from the office of the Agricultural Marketing Service in Washington. However, in cases, where a manufacturer prefers a personal hearing at Washington, this will be permitted where the facts warrant such a hearing and such will be arranged by mutual convenience.

—— ♦ ——

Moyer Named A.I.F.A. Head

Warren H. Moyer, vice-president of Chipman Chemical Co., Bound Brook, N. J., was elected president of the Agricultural Insecticide and Fungicide Association at the annual meeting of the association held recently in Cleveland. Other officers elected were: vice-president, H. C. Davies, of California Spray Chemical Co.; executive secretary and treasurer, Lea S. Hitchner, and assistant secretary, Miss June C. Heitzmann. Elected to the directorate were: J. H. Boyd, of Commercial Chemical Co.; J. B. Cary, of Niagara Sprayer & Chemical Co.; R. E. Demmon, of Stauffer Chemical Co.; A. J. Flebut, California Spray-Chemical Corp.; G. F. Leonard, of Tobacco By-Products & Chemical Corp.; H. P. Mansfield, of E. I. duPont de Nemours & Co.; H. D. Whittlesey, of Sherwin-Williams Co.; Mr. Moyer and Mr. Hitchner.

—— ♦ ——

Label Pyrethrum Basis 0.5%

Leading pyrethrum millers selling pyrethrum powder to the insecticide trade in barrels and other large packages are basing their labels on the barrels on a pyrethrins figure of 0.5 per cent. In other words, pyrethrum millers are labeling barrels either 0.5 per cent active or 99.5 per cent inert irrespective of the fact that the pyrethrum may run 0.8 per cent, 0.9 per cent or higher, and may be made from Japanese, Kenya or Dalmatian flowers. The statement of active or inert ingredients on pyrethrum powder is required under the Department of Agriculture regulations which went into effect Sept. 1. The requirement applies to barrels, kegs, etc. as well as to small retail packages shipped in interstate commerce.

This style of labeling, that is stating a set uniform figure of 0.5 per cent on all pyrethrum powder even though it may actually assay much higher than this, is reported by the millers to be for their own protection in the case of unbroken packages held in storage by a purchaser for any length of time. It is the same as the figure suggested by the National Association of Insecticide & Disinfectant Manufacturers to insecticide manufacturers and is calculated to allow a safe margin for deterioration in storage.

Two millers report that they are labeling their material as containing not more than 99.5 per cent inert, while others are using the figure for active ingredients as pyrethrins, 0.5 per cent. One house states that it is labeling Dalmatian pyrethrum 0.25 per cent pyrethrins and other types as 0.5 per cent. Two are reported considering the use of a higher figure on Kenya powder, but have not as yet decided what that figure shall be or if or not they will use it.

Some protests have been received from insecticide manufacturers against this method of labeling by suppliers, these maintaining that the manufacturer does not know what he is really getting, whether the material he is packaging or blending is 0.5 or 0.9 per cent. They state that this system leaves the door open for unloading inferior pyrethrum powder on those who have been in the habit of obtaining 0.8 and 0.9 per cent material. Several large buyers have stated that they will insist upon an assay and an exact pyrethrins figure of all material which they purchase, but pyrethrum millers maintain that this is not feasible or possible except on large shipments. The latter mention the danger of the purchase of cheap pyrethrum powder, particularly odd lots of unknown origin, inasmuch as they may assay low in pyrethrins and be the cause of trouble when repackaged.

—— ♦ ——

DCAT To Meet Oct. 18-19

The Drug, Chemical and Allied Trades Section of the New York Board of Trade, will hold its fifth annual Fall meeting and golf tournament, October 18 and 19 at the Skytop Club, Skytop, Pa. The meeting will be opened informally with a cocktail party on Thursday, October 17; golf is scheduled for Friday and Saturday mornings, and the business meeting will be held Friday afternoon. Registration fee for the meeting is $7.50 per person.

N.E.P.C.A. Meet in Boston

The fall and winter season of the New England Pest Control Association was opened with a meeting at the Hotel Lenox, Boston, on September 16. A feature of the meeting was the showing of the motion picture developed by Henry Turrie of Wil-Kil Exterminating Co., Milwaukee. George Elliot, vice-president, reported on the illicit practices of an itinerant "rat control specialist." A policy was adopted unanimously to conduct only two open meetings a year, the remainder being reserved solely for members and associate members.

British Metal Naphthenates

Calls by British Government Departments for high-efficiency rot-proofing solutions for textiles have been responsible for much of the research work now being carried out in Great Britain on metallic naphthenates. New rot-proofing emulsions containing as high as 6 per cent copper (as copper naphthenate), are prepared by the use of sulfonated oils and it is claimed that their stability is very high. The emulsions are said to act as wetting agents as well as emulsifying agents and to be more economical than spirit solutions as no recovery plant is necessary and there is no fire hazard.

Japanese Pyrethrum Exports

Japanese exports of pyrethrum may reach a new low in 1940 if recorded export figures released by the Department of Finance in Tokio, for the first five months may be taken as an indication. Shipments of pyrethrum in 1939 were 60 per cent below the average of the preceding ten years and figures for the first five months of 1940 were approximately 40 per cent below the figures for the corresponding period of 1939.

I.C.A. Buys New England Plant

Insecticide Corp. of America, Medina, N. Y., recently purchased the insecticide branch of National Electrochemical Co., Boston, according to an announcement made by Dean Strickler, general manager of I.C.A. The New England plant will be dismantled and the machinery and equipment removed to Medina to be used in the manufacture of lead and arsenic products in the main manufacturing plant of Insecticide Corp. Joseph Armstrong, former manager of the branch, will take charge of the manufacturing operations of the newly acquired units.

New Soap Powder Plant

Sanitary Floor Compound Co., 104 Railroad Ave., Paterson, N. J., manufacturers of sweeping compounds, detergent powders, disinfectants, potash soaps, etc., for the trade will soon be operating a new soap powder plant at that address. Their plant has been expanded to utilize the entire 32,000 square feet in the two-story building on Railroad Ave., the soap powder unit being of the two-story tower variety. Carload shipping facilities are available.

Fire at Van Schaack Chem.

Damage estimated at $50,000 was suffered recently by Van Schaack Chemical Works, 3430 Henderson St., Chicago, when the short-circuiting of an extension light cord caused the explosion of a tank of benzol. After firemen had the blaze under control a second explosion of another benzol tank critically burned eleven firemen who were trapped in a narrow passageway while reeling in hose lines. Six other firemen had been overcome by fumes in fighting the first blaze. L. L. Van Schaack, company executive, said the loss was not covered by insurance.

Anthony Paul Dies

Anthony Paul, president of Nueva Fumigating Co., Chicago, died on September 9th at St. Elizabeth Hospital following a short illness. Mr. Paul is survived by his widow and a son, Reynolds. The business will be carried on as before by M. Paul and L. Paul.

Blue Ribbon Prods. Moves

Blue Ribbon Sanitary Products Co., floor products, St. Louis, has moved to a new address at 6039 Oleatha Ave.

Study Insecticide Dispersants

The Bureau of Entomology and Plant Quarantine of the U. S. Department of Agriculture recently conducted a series of laboratory studies to determine the minimum quantities of various common dispersing agents necessary to produce stable dispersions of a number of insecticidal substances. The investigation comprised animal, chemical (synthetic), mineral and vegetable products used as dispersants with a variety of materials commonly used as insecticides, and a report of the investigation was published by the Department of Agriculture as circular No. 568. Copies are available at 5 cents each.

Silver as a Fungicide

The possible applications of silver in various forms as a fungicide and as a disinfectant are discussed at length in a chapter of "Silver in Industry," a 636-page book just published by Reinhold Publishing Co., New York. The chapter, Silver as a Fungicide, by L. W. Nielson, Silver Research Fellow, and L. M. Massey, Professor of Plant Pathology, Cornell University, deals with the acknowledged but barely explored antiseptic and bactericidal properties of silver and its compounds. Certain silver salts, silver-soap mixtures and colloidal silver are shown to have an inhibiting effect on spore germination of plant pathogens when dilute solutions are used as a spray.

United Chemical Co. Moves

United Chemical Co., fumigation supplies, New Orleans, has recently moved to larger quarters at 851 Carondelet Street, according to an announcement by Joseph Mandlebaum.

National Container Building

National Steel Container Corp., Chicago, manufacturer of steel drums, is erecting a new plant at 67th St. and South Le Claire Avenue, in the clearing industrial district. Estimated cost of building and land will be approximately $125,000.

Pest Control Program Plans Announced for Oct. 28-30 Meeting

THE National Pest Control Association will hold its eighth annual convention at the Hotel Claypool, Indianapolis, October 28-30, offering a well-rounded program which will include several dozen prominent authorities speaking on a whole series of topics of interest to the pest control industry. An interesting feature of the arrangements for this year's convention is the provision for broadcasting parts of several sessions. Three Indianapolis radio stations have allotted broadcasting time as follows: WIBC, Oct. 28—2:15 P.M.; Oct. 29—10:30 A.M.; Oct. 30—10:30 A.M. WIRE, two quarter hour periods between 11:30 A.M. and 1:30 P.M. each day of the convention. WFSM, one quarter hour period to be announced.

Entertainment features will include the "Pest Control Follies" in the Riley Room of the Claypool the evening of Tuesday, Oct. 29, and the annual banquet at which Dr. Edward C. Elliott, President of Purdue University, will preside as toastmaster, on Wednesday evening, Oct. 30. As in previous years there will be an extensive equipment and raw material show. The first evening of the convention will be devoted to an inspection of the exhibits. The complete program for the balance of the convention follows:

MONDAY, OCTOBER 28, 1940

8:30 to 9:30 A.M.—*Registration.*

9:30—*Convention Called to Order.* Lawrence A. McKenna, General Chairman.
Invocation. Rev. Howard J. Baumgartel.

9:40—*Greetings.* Edward H. Arnott, Local Chairman.

9:45—*Address of Welcome.* Governor M. Clifford Townsend.

9:55—*Response.* Walter S. McCloud.

10:00—*Annual Message of the President.* Walter S. McCloud.

10:15—*Annual Report of the Secretary.* William O. Buettner.

10:25—*Annual Report of the Treasurer.* George R. Elliott.

10:30—*Introduction of Distinguished Guests and Visitors.* William O. Buettner.

Among those who will take leading parts in National Pest Control Meeting—(right) Walter S. McCloud, president, will preside; (below) Dr. C. L. Williams, Assistant Surgeon General, U. S. Public Health Service, and (lower right) Dr. F. C. Bishopp, U. S. Department of Agriculture will be leading speakers.

10:45—*Memorial Service.* H. K. Steckel.

11:00—*Committee Reports:*
(a) Membership and Regional Vice-Presidents: Charles W. Houston, Albert M. Akers, A. T. Parsons, Max J. Levy, Otto Orkin.
(b) Finance: Lawrence A. McKenna.
(c) Ethics: H. G. Irving Sameth.
(d) Advertising: George R. Elliott.
(e) Auditing: Albert M. Akers.
(f) Grievance: H. G. Irving Sameth.
(g) Materials, Standards and Methods: Charles Denny and George L. Hockenyos.
Sub-Committees:
(1) Common Household Pests: Harvey W. Klein.
(2) Termites: Walter B. Hill.
(3) Rodent Control (Rats and Mice): Harlem B. Ives.
(4) Moths and Carpet Beetles: Henry Turrie.
(5) Ants: Robert B. Loibl, Sr.
(6) Fumigation: Bartlett W. Eldredge.
(h) Co-Operation with American Association of Economic Entomologists: Charles Denny.
(i) Contract or Agreement Forms: Matthew Russell.
(j) Cost Analysis: Robert C. Yeager.
(k) Governmental (National-State-Municipal) and University Co-operation: P. Calvert Cissel.
(l) Insurance: Arthur W. O'Connor.
(m) National Councillor: P. Calvert Cissel.
(n) Technical: Dr. Alfred Weed.
(o) Legislation: William O. Buettner.
(p) Constitution and By-Laws: J. R. Franklin.
(q) Standard Specifications: C. Norman Dold.
(r) Office Routine and Procedure: Louis Kotler.
(s) Testing Committee: H. K. Steckel.

11:45—*"The Brown Dog Tick and Others, Their Significance and Control".* Dr. F. C. Bishop.

12:25 to 1:45 P.M.—*Luncheon,* followed by P.C.O. Quiz Court under direction of David W. Lynch, Lawrence A. McKenna, and Jason Nicholas.

MONDAY AFTERNOON

2:00 P.M.—*Convention Reconvenes.* Walter S. McCloud presiding; Max J. Levy assisting.

2:05—*Fumigation Clinic.* Bartlett W. Eldredge, Chairman; E. H. Leitte, P. Calvert Cissel, Max Rukin, J. N. Seidman.
(a) "Physiological and Psychological Effects of Fumigants". Dr. B. H. Vollertsen.
(b) "Comments On Accidents and Fatalities Since 1939 Convention". Dr. C. L. Williams.
(c) "Sulphur Fumigations". George L. Hockenyos.
(d) Questions and Answers.

3:50—*Rats and Mice Clinic.* Harlem B. Ives, Chairman; A. S. Krawcheck; E. E. Edwards, Glen H. Burnett.
(a) "Economic Poisons and Their Application in the Control of Rats and Mice". F. E. Garlough.
(b) "Rodent Control and Its Rela-

THE MAC-LAC COMPANY

INCORPORATED

127 Maiden Lane **New York, N. Y.**

Manufacturers for More Than 50 Years

SUPERIOR QUALITY

REFINED SHELLAC

DEVELOPED ESPECIALLY FOR USE IN NO RUBBING WAXES

- *Economical*
- *Dissolves Readily*
- *Low in Acid*
- *Gives Beautiful Film*

We Also Offer

EXTRA WHITE BONE DRY and all other grades of SHELLAC

Samples Upon Request

TRY THESE WITHOUT OBLIGATION AND CONVINCE YOURSELF

THE MAC-LAC COMPANY

INCORPORATED

FACTORY: **RAHWAY, N. J.**

Reilly

COAL TAR PRODUCTS

For the **SOAP** *and* **DISINFECTANT** *Industry*

CRESOLS
U.S.P., Meta Para, Ortho, Special Fractions.

CRESYLIC ACIDS
In various distillation ranges—for all uses.

TAR ACID OILS
In all grades, from 10% to 75% tar acid content—carefully blended.

XYLENOLS
Low boiling, high boiling, symmetrical.

NAPHTHALENE
Crude (70° to 78.5° C. melting point) and Refined White Naphthalene melting above 79.4° C., in chipped, crystal, ball, flake and powdered form.

REILLY TAR & CHEMICAL CORPORATION

1627 Merchants Bank Bldg., Indianapolis, Ind.
500 Fifth Ave., New York
2513 S. Damen Ave., Chicago

15 PLANTS *To Serve You*

tion to Typhus". Dr. C. L. Williams.
(c) "How Shall We Handle Rat Problems". Galen C. Odorkirk.
(d) Questions and Answers.

TUESDAY, OCTOBER 29, 1940
MORNING

9:00 A.M.—*Convention Called to Order.* Walter S. McCloud; Albert M. Akers assisting.
9:05—*Termites and Wood Boring Insects Clinic.* Walter B. Hill, Chairman; George L. Hockenyos; Ernest R. Barber; F. Kenneth Harder; Jess M. Miller.
(a) "Termite Interview". Dr. Thomas E. Snyder and William O. Buettner.
(b) "Termite Motion Picture". Dr. Thomas E. Snyder.
(c) "The Powder Post Beetles". M. B. Christian.
(d) Questions and Answers.
11:30—*"Research in the Field of Entomology".* Dr. Lee A. Strong.
12:15 to 1:45 P.M.—*Luncheon. "Misleading and Unethical Advertising".* Arthur N. Overley.

TUESDAY AFTERNOON

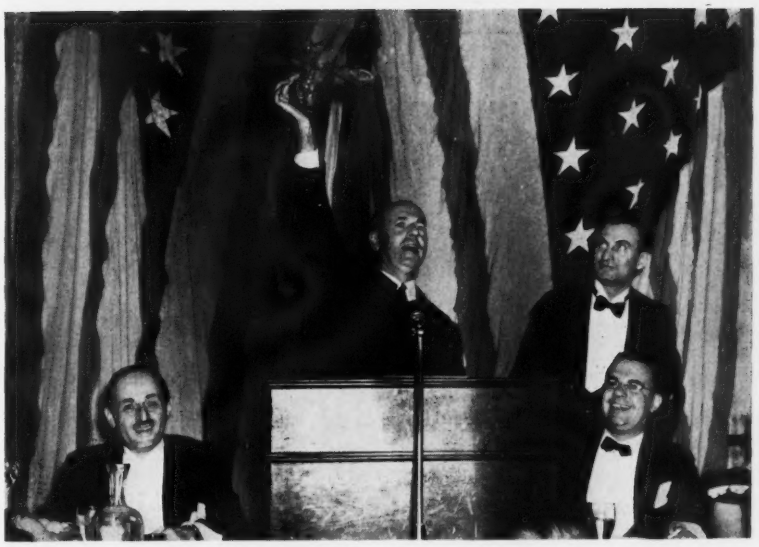
2:00 P.M.—*Convention Reconvenes.* Walter S. McCloud presiding; Charles W. Houghton assisting.
2:05—*"A Viewpoint from Property Management"* by Earl B. Tekemeyer.
2:30—*"Public Relations, Sales Promotion, Advertising".* George R. Elliott Chairman; Louis Kotler, Louis Gatto, Harold E. Jennings, Joseph Lipshie.
(a) "Ethics of Salesmanship". Prof. P. E. Lull.
(b) "Termite Rackets". W. E. McCauley.
(c) Motion Pictures As A Medium of Public Relations.
(1) "Film on Household Pests". Henry Turrie.
(2) "Fumigation Film". William O. Buettner.
(3) "Termite Films". Dr. Thomas E. Snyder.
(d) Sales Demonstrations.
(1) A Private Home bedbug job. Customer: Charles Denny. P.C.O.: Adolph A. Stern.
(2) An Apartment House of 16 families. Customer: Louis Weintraub. P.C.O.: T. Martin Meyer.
(3) Hospital Maintenance Service. Customer: Albert M. Akers. P.C.O.: F. E. Bohman.
(4) Loft or Office Building Maintenance Service. Customer: Irving H. Josephson. P.C.O.: Robert C. Yeager.
(5) Restaurant. Clean-up and Service. Customer: J. Robert Byrne. P.C.O.: Sidney Wimmer.
(e) Summary and Critique. Harold E. Jennings.
(f) Questions and Answers.

TUESDAY EVENING

8:30 P.M.—Riley Room, Claypool Hotel. "Pest Control Follies" under supervision of Charles W. Partlow and Lawrence A. McKenna.

WEDNESDAY, OCTOBER 30, 1940
MORNING

9:15 A.M.—*Convention Called to Order.* Walter S. McCloud.
Theme: "Looking to the Future of the Pest Control Industry".
(a) "The Entomologist Looks at the Pest Control Industry". Prof. J. J. Davis.
(b) "A Public Official Looks at the Pest Control Industry from the Standpoint of Legislation". Enos B. Buchanan.



At the 1939 banquet of the National Pest Control Association,—the meeting last year was held in New York,—the president and two past-presidents listened to a speaker discuss insect life, the "insect" being a stuffed lobster. Left is H. G. Irving Sameth of Sameth Exterminating Co., New York, 1939 president; rear right, C. Norman Dold of Rose Exterminator Co., Chicago, 1936 president; lower right, Walter S. McCloud of W. B. McCloud & Co., Chicago, 1940 president. At the banquet this year on Oct. 30 in the Claypool Hotel, Indianapolis, Dr. Edward C. Elliott, president of Purdue University will be the speaker of the evening.

(c) "The Chemist Looks at the Pest Control Industry". Dr. Cady S. Cerl.
(d) "The Manufacturer Looks at the Future Pest Control Industry". Dr. George H. Chapman.
(e) "The P.C.O. Looking at His Industry". C. Norman Dold.
10:30—*Business Session.*
11:30—*"Common Names of Household Insects".* Prof. F. L. Campbell.
11:50—*Report of Nominating Committee.*
11:55—*Election of Officers and Directors,* October 1940 to October 1941.
12:10 P.M. — *Announcements and Adjournment.*
12:20—*Luncheon.* "The Problems of Pest Control Through Legislation". Frank N. Wallace.

WEDNESDAY AFTERNOON

2:00 P.M.—*Convention Reconvenes.* Walter S. McCloud presiding; Otto Orkin assisting.
2:05—*"Household Pests in General Clinic".* Prof. J. J. Davis, Chairman; Dr. E. A. Back, Prof. W. P. Flint, Prof. T. H. Parks, Prof. H. O. Deay, W. E. McCauley, J. H. Sturgeon, George E. Gould.
(a) "Silverfish and Their Control". Dr. D. M. DeLong.
(b) "Labelling of Insecticides". J. Van Velsor Smith.
(c) "The Black Carpet Beetle and Its Control". D. N. Murphy.
(d) Questions and Answers.
4:30—*Unfinished Business.*
5:00—*Announcements and Adjournment*

WEDNESDAY EVENING

7:30—*Annual Banquet.*
Toastmaster: Dr. Edward C. Elliott.

"K" Disinfectant Head Dies

Harry Worrell, head of "K" Disinfectant Co., Columbus, died recently after a long illness.

N.A.R.D. Meets in N. Y.

Over three thousand druggists from all parts of the United States attended the forty-second convention of the National Association of Retail Druggists held in New York, September 23 to 27. Headquarters were at the Hotel Pennsylvania where exhibits of almost 100 companies were on display. Among the exhibitors were: Pepsodent Co., McKesson & Robbins, Inc., Norwich Pharmacal Co., Weco Products Co., Merck & Co., E. R. Squibb & Sons, Frederick Stearns & Co., Allen B. Wrisley Distributing Co., Admiracion Laboratories, Mennen Co., J. B. Williams Co., Mallinckrodt Chemical Co., Colgate-Palmolive-Peet Co., Owens-Illinois Glass Co., Lightfoot Schultz Co., Lehn & Fink, Inc. and Gillette Safety Razor Co.

Red Cross Soap Requirements

Soap shipments recently sent to Great Britain by the American Red Cross included 8,666 cases totaling 438,880 pounds.

HERE'S YOUR AMMUNITION

for the fall campaign

SELF POLISHING FLOOR WAX

•

RMP METAL POLISH

•

COAL TAR & PINE OIL DISINFECTANTS

•

FAST SELLING PRODUCTS THAT PUT YOUR SALES "OVER THE TOP"

CREAM FURNITURE POLISH

•

KLEEN-AIRE SPRAY

•

PINE SCRUB SOAPS

•

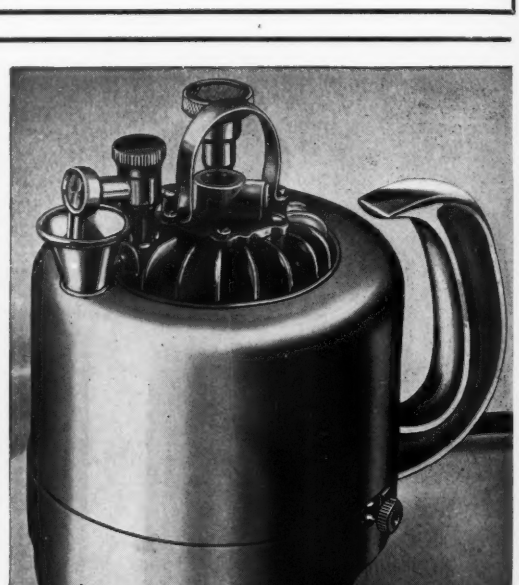
Write for samples, prices and further information

THE CHEMICAL SUPPLY CO.

2450 CANAL ROAD, —CLEVELAND, OHIO

• • *DISINFECTANTS, INSECTICIDES, CLEANING COMPOUND, POLISHES, ETC.* • •

. . . good insecticides deserve to be applied properly . . . look into DULA sprayers.



STEAMASTER EXTERMINATOR

With steam serving both as an ingredient and as a force, the insecticide itself is held in moist suspension and the attack is made at full strength . . . thus guaranteeing a 100% thorough job of pest extermination. Completely enclosed heating element. Operates from any electric outlet. No fire hazard. Current shuts off automatically when water level drops below the level of the heating element.

Write Today for Complete Details, Prices and Descriptive Literature.

MOTORMATIC Electric SPRAYER

Designed for thorough pest annihilation . . . and at a saving of time, labor and money. Requires no preliminary preparations. Does not waste a drop of fluid. Gives Insecticide finest possible diffusion and longest possible floating suspension. Automatic shut-off. Operates simply and easily on any current. Heavy duty durable construction.

DULA MFG. CO. INC., 351 Atlantic Ave., Brooklyn, N. Y.

Manufacturers to the Wholesale Trade Only

Reviews Insecticide Mixtures

A survey of mixtures of sprays and dusts for controlling a combination of citrus pests with one treatment, with special emphasis on compatibility or non-compatibility of the mixtures, has recently been made by Howard H. Wilson, deputy agricultural commissioner, Los Angeles County, and published in the September issue of the *California Citrograph*. The tabulation shows the combination of pests that have been treated with a single application of one material or a mixture of materials, and gives those mixtures which are compatible and the mixtures that are to be avoided. It is brought out that certain insecticides will not work effectively when mixed, either because of their chemical or physical non-compatibility or because the combining of the materials makes them less potent as insecticides.

S. B. Sonneborn Dead

Siegmund B. Sonneborn, founder of the New York firm of L. Sonneborn Sons, oil refiners and makers of insecticide bases, died September 18 at the Hotel Stafford in Baltimore, where he had made his home for the last several years. Mr. Sonneborn, who was sixty-eight years old, was active in other fields as well before his retirement, having been president of the one-time largest clothing manufacturing business in the world, Henry Sonneborn & Co., New York. Mr. Sonneborn was known as one of the pioneer employers to introduce collective bargaining among his employees. A son, Rudolph G. Sonneborn, is the present president of L. Sonneborn Sons.

Discuss Insecticide Labels

Ira P. MacNair, secretary of the National Association of Insecticide and Disinfectant Manufacturers and editor of *Soap and Sanitary Chemicals*, addressed the New York Pest Control Association on the subject, "The New Labeling Regulations Covering Pyrethrum Insecticides," at the first fall meeting of the association held at the Dubonnet Restaurant, New York, September 24.

Adams Employes Picnic

Employes of V. P. Adams, Inc., Jamaica, N. Y., sanitary products distributors, were the guests of

Vincent P. Adams, president of the firm, at an outing and shore dinner held at The Snapper Inn, Oakdale, on the Great South Bay, Long Island, last month. The outing included a sail on Mr. Adams' cruiser, "Happy Days," on the Great South Bay. The group with Mr. Adams on the extreme right is pictured here.

Hilts Labs. Moves Quarters

Hilts Laboratories, Ltd., Honolulu, sanitary supplies and pest control service, have recently moved into larger quarters at 718 Ala Moana, across from Mutual Telephone Co. warehouse, and at the same time consolidated their several departments at the same address.

Whitmire Distributes Folder

Whitmire Research Corp., St. Louis, is now distributing to insecticide manufacturers a folder describing specific properties and performance records of a number of insecticidal materials, including "Dihydrolin," a dihydrorotenone compound, "Diro," a semi-synthetic insecticide concentrate, "Pralytex," a compound rotenoid derris extract, and "Protex," for manufacturing agricultural sprays or dusts. The prospectus is illustrated with pictures showing the results of comparative tests on crops and animals and the facilities at the Whitmire plant for manufacturing, compounding and blending of commercial insecticides.

Domestic Pyrethrum Costs

Total costs of a test pyrethrum planting on 1¼ acres at Fontana Farms Co., Fontana, Cal., were almost $100 more than income from sale of the production, according to information received by the National Farm Chemurgic Council. The main item of expense in the cultivation of pyrethrum in California was the harvesting cost, which amounted to $115.22 for the first crop of blossoms (1,041 pounds), out of the total expenses of $321.13. The crop was sold for $229.02. If reduction of harvesting cost can be effected by the new mechanical picker recently developed by the United States Department of Agriculture, it is felt that pyrethrum can be grown profitably in the United States.

Crowell in Chemical Warfare

Major C. W. Crowell, vice-president of the Rochester Germicide Co., Rochester, N. Y., and in charge of production for that company, was called to active duty by the Chemical Warfare Service, U. S. Army, on Sept. 15. Major Crowell has taken up active duty as Chief of Production and Material Specifications on the staff of General Walter C. Baker, Chief, Chemical Warfare Service, and has been assigned at Washington, D. C., probably for one year or longer. Major Crowell served as an officer in the Chemical Warfare Service in France in the World War from January, 1918 to August, 1919.

Lehn & Fink Profits

Lehn & Fink Products Corp. Bloomfield, N. J., and domestic subsidiaries recently reported net income for the six months ended June 30, 1940, of $304,354, equal to 76 cents a capital share. This compares with a net income of $307,666, or 77 cents a share for the six months ended June 30, 1939.

New Arrival for Roberts'

A son, Robert Charles Roberts, was born to Mr. and Mrs. Walter Roberts on September 5. Mr. Roberts is connected with Model Exterminating Co., Jersey City, N. J.

KRANICH

Specialists in

PURE POWDERED SOAPS

•

CASTILE, POWDERED
U. S. P.

•

COCONUT, POWDERED
Pure

•

COCO-CASTILE, POWDERED
50-50

•

POTASH SOAPS

Liquid Olive Oil Soap Shampoo
Liquid Coconut Oil Soap Shampoo
Liquid Castile Soap Shampoo
Shampoo Base (Olive Oil & Coconut Oil)
Oil Soaps Scrubbing Soaps

KRANICH SOAP COMPANY
56 Richards St. Brooklyn, N. Y.

SOAPS

USE MANTROSE QUALITY SHELLAC

For Better No Rubbing Waxes

OUR No. 65 EXTRA WHITE REFINED BLEACHED SHELLAC has been adopted by discriminating manufacturers of No Rubbing Waxes.

BECAUSE—It will dissolve quicker and require less Alkali thereby producing more durable, more water resistant and higher gloss finishes.

We invite your shellac problems.

THE MANTROSE CORPORATION
136-146 41st Street : Brooklyn, N. Y.

Agents in Principal Cities

Boston, Mass.—M. F. Robie
Rochester, N. Y.—J. E. McManus
Cleveland, Ohio—J. H. Hinz Company
St. Louis, Mo.—Phil A. Sullivan Sales Co.
Los Angeles, Calif.—S. L. Abbot, Jr., Co.
Philadelphia, Pa.—Frances Patterson
Chicago, Ill.—Harry Holland & Son, Inc.
Baltimore, Md.—William McGill
San Francisco—E. M. Walls
Danbury, Conn.—J. E. Pike
Cincinnati, Ohio—E. J. Moriarty
Canada—Harrisons & Crosfield, Ltd.
Montreal, Toronto and Vancouver

Insecticide Odors

(*From Page* 107)

containing odorants which had poor masking power.

This phenomenon probably has an explanation based on the science of scent which of course is outside the scope of this discussion. However it would be interesting to determine whether or not this phenomenon is apparent to other observers.

In the event that this test procedure being used by purchasers of insecticide odors, observations should be made by more than one person, preferably three or more. The course followed in one instance where a rather large purchase was made, might serve as a guide although some of the refinements given in the procedure described herein were not used. Samples were requested with bids and a committee was assigned the task of passing on the acceptability of the odor characteristics. Two of the committee represented the using agencies, two others the purchasing division and one person the buyer's testing laboratory. The samples were blinded to all members of the committee who voted independently as to whether or not the odors were objectionable either in the container or upon spraying. Incidentally another factor judged at this time was the tendency of the sprays to impart taste or odor to exposed food. The unanimity of opinion on the odor characteristics of the particular sample accepted was rather surprising in this instance too.

While there may be a tendency on the part of the industry and the buyer to overlook the factor of desirable odor characteristics in insect sprays, it is believed that it is becoming of greater rather than lesser importance. Therefore some basis of evaluation must be eventually provided. The information presented here carried no pretense of a truly scientific or precise laboratory procedure, but is offered as a rough practical performance test method. It is hoped that it may stimulate further study toward the establishment of a standard method for judging the merits of odorants for insecticides, and the acceptability of the odorized product on the part of the purchaser.

—— ♦ ——

Dish Washing

(*From Page* 27)

calcium and magnesium salts in the water supply form adherent precipitates from the alkaline salts added as detergents and the soap resulting from the saponification of the fatty acids in the grease. These precipitates destroy the brightness of chinaware and give glassware an unattractive cloudy appearance. Recent studies directed toward finding a solution to this problem seem to indicate that the use of sodium metaphosphate in the formulation of dishwashing compounds greatly inhibits the formation of inorganic films of this type. If films are allowed to accumulate on glasses and dishes, they not only detract from the appearance of the tableware but also, make efficient cleaning a much more difficult operation. A rough surface readily serves also to harbor disease germs. A formula for dishwashing compound for the prevention of film due to hard water was recommended as the result of extensive research on the subject by C. Schwartz and B. H. Gilmore. Its composition is as follows: sodium metaphosphate, 40 per cent; sodium metasilicate (pentahydrate), 40 per cent; trisodium phosphate (monohydrate), 15 per cent; sodium hydroxide, 5 per cent.

The temperature at which the washing operation is carried out is another highly important factor in efficient dishwashing. For best results, the water should be neither scalding hot nor luke-warm. A temperature of about 140° F. has been recommended as the optimum. For obvious reasons, good loosening action on greases cannot be attained in mechanical dishwashing if the water is cold or lukewarm. At the same time, if the temperature is excessively high, certain food residues, such as egg, spaghetti, spinach, etc., congeal on the dishes and become difficult to remove. Thus, a temperature control of some sort is necessary for good mechanical dishwashing to insure that the water is always kept at about 135-145° F. This is desirable not only for hygienic reasons but also makes for speedier throughout.

After the dishes have been thoroughly cleaned, they are transferred to a hot water rinse to remove the alkaline salts and soaps and then sterilized to kill micro-organisms clinging to the surfaces of cups, plates, etc. It is the omission or superficial treatment of this operation which is responsible for the unhealthy state of affairs which exists today. It is principally the neglect of proper rinsing and sterilization that accounts for the fact that in a representative survey of hotels and restaurants, 93 per cent of glasses and utensils were found to be improperly cleaned and showed a dangerously high bacterial count. Only 7 per cent of supposedly clean utensils and implements used in restaurants were declared safe! Space does not permit a discussion here of the resistance of disease germs to heat and chemicals but it is well known that certain dangerous micro-organisms can and do survive fairly drastic treatment. In order to be on the safe side, all utensils used in serving food in public places should be sterilized in any one of several different ways: by rinsing or spraying or immersion in clean hot water of 200° F. for at least 30 seconds; or in hot water of a temperature not less than 165 to 175 degrees for a period of one minute; or by treatment with live steam in an enclosed compartment for five minutes; or by immersion in chlorine rinse water containing at least 100 parts per million of chlorine for five minutes.

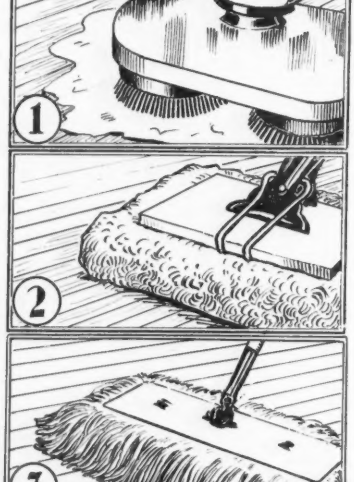
The use of a chlorine preparation (usually sodium hypochlorite) is advised by health authorities when there is insufficient scalding water to perform the disinfection. When the above methods are used properly the restaurant manager may be sure that his dishes are safe for public use, when they come from the washer, (the possibility of recontamination dur-

FEDERAL

NOW.....

PERMANENT BEAUTY ON HEAVY TRAFFIC FLOORS

The 3 POINT PROGRAM



1-Proper Preparation of Surface

2-Correct Materials and Application

3-Scientific Maintenance

Make sales easier and quicker. Let us tell you why the 3 Point Floor Finishing and Maintenance Program will appeal to your customers and build new profitable business for you.

Write to us for full details.
No cost or obligation.

FEDERAL VARNISH CO.
FLOOR FINISH DIVISION
DEPT. 410 • 331-337 S. Peoria St. CHICAGO

your money's worth!

the editor of a prominent London business publication in the drug and chemical field has this to say about the technical information in SOAP and SANITARY CHEMICALS:

"I must say that I find your journal the most informative of all the technical journals we receive here from America. So many of the technical journals published in this country and in yours are just so much padding, but with your journal as soon as it comes into my office it is cut into about a dozen different parts and filed under various headings for future reference. With most other journals, one is fortunate if one gets a useful article or piece of information per issue."

●

Other Features

1. **Complete news of the industry interestingly and concisely reported.**
2. **Up-to-the-minute market information on all raw materials used by soap and sanitary chemical manufacturers.**
3. **Complete record of new trade marks and patents in every issue.**
4. **Marketing, packaging and sales feature articles in every issue written by the industry's experts.**

all in

SOAP and SANITARY CHEMICALS
254 W. 31st STREET, N. Y. C.

Subscription: **Three Dollars Annually in the U. S. A.**

Foreign, $4.00

ing handling or storage is always present. Ed. Note.) But in how many restaurants, barrooms and cafeterias are any of these methods employed? It is obvious from the results of surveys conducted by the New York State Agricultural Experiment Station in Geneva, N. Y., that only a very small percentage of restaurants regard sterilization as a serious matter. Even in the rare instances where utensils are disinfected it is often the case that dish towels are used for drying which, of course, un-sterilizes the glasses, etc. They should instead be allowed to dry by evaporation or draining which actually takes less time than hand-drying provided the final rinse water has been sufficiently hot.

SOMETHING undoubtedly must be done about the unsanitary dishwashing conditions so prevalent today. And something can be done about it. While most communities have some sort of regulations relating to dishwashing in restaurants, it is clear that these sanitary codes are in many cases not being enforced or are so vaguely worded as to be ineffectual in stamping out this known avenue of disease transmission.

Law enforcement has always been a stumbling block, for while boards of health realize the gravity of the situation, they often protest that enforcement of the sanitary codes is virtually impossible with their limited personnel. Fortunately there are a few communities which are shining examples to prove that law enforcement *is* possible. Take the example of Washington, D. C. A few years ago a clean-up campaign was conducted in Washington by the Washington Restaurant Association in cooperation with the local Public Health Service and the food inspection bureau of the Health Department. The campaign was conducted in this way. In a city of the size of Washington only three inspectors were required to cover every eating place in the city. Each one of them was able to visit 200 restaurants a week to inspect the condition of the utensils and secure samples for analysis. Upon entering a restaurant, the expert selected several "clean" glasses at random from the service racks and then, taking a sterile damp cotton swab from his kit, ran the swab around the rim of the glasses to secure samples. Forks and spoons were shaken in a test tube of sterile water and the specimens thus obtained were returned to the laboratories for inspection. Tests were also made on the dishwater and rinse water to see whether they conformed to standards for temperature and general condition. By preparing cultures in agar-filled "petri plates" under standardized conditions, it was possible to determine the number of bacteria originally present on the glass, fork or spoon, as the case may be, and to discover whether the dishwashing methods in each restaurant in the city were effective or not. (An improved test method for determining bacteria count on china ware has been developed by the research workers at the New York State Experiment Station. They are also working on an index of cleaning efficiency for dishwashing detergents and dishwashing machines. Ed. Note.)

The first findings of the clean-up campaign revealed that Washington restaurants were highly unsafe places to eat. Bacteria counts as high as 530,000 per utensils were found and in almost every instance, bacteria counts were greatly in excess of the permissible maximum. Every time a bacteria count above 500 per utensil was discovered, the restaurant owner was warned, and, if warnings were persistently ignored, he was taken to court and fined. This procedure proved to be very successful. One year after the campaign was begun 75 per cent of restaurants in the city were conforming with regulations and had cut down their utensil bacteria count to less than 500. Still not satisfied, officials are now aiming for bacteria counts of less than 100 and are finding their enforcement problems less difficult as time goes on.

What has been done in Washington, D. C., can also be accomplished in other cities. If restaurant managers will not of their own accord recognize the need for better dishwashing, they should be made to safeguard the health of their customers by rigid laws and stricter enforcement.

◆

Soap Awards

(*From Page* 49)

In a recent opening by the Army Quartermaster, Brooklyn, the following contracts were awarded: Swift & Co., New York, 150,000 cakes soap at 0.88 cents; Sterling Supply Corp., Philadelphia, 50,000 cakes soap at 4.91 cents; John T. Stanley Co., New York, 1,200,000 pounds soap at 2.74 cents; S. & S. Soap Corp., Brooklyn, 24,000 cakes grit soap at 1.7 cents; Day & Frick, Philadelphia, 150,000 cakes grit soap at 2.9 cents.

◆

Metal Polish Award

Imperial Products Co., Philadelphia, was awarded the contract on 30,000 cans metal polish at 7 cents in a recent opening by the Army Quartermaster, Brooklyn.

◆

T.S.P. Award

American Soap Powder Works, Brooklyn, was awarded the contract on 125,000 pounds trisodium phosphate at 2.81 cents in a recent opening by the Army Quartermaster, Brooklyn.

◆

Metal Polish Award

Martin & Martin, Chicago, were awarded the contract on 3,216 cans metal polish at 6.9 cents in a recent opening by the Army Quartermaster, Chicago.

◆

T.S.P. Award

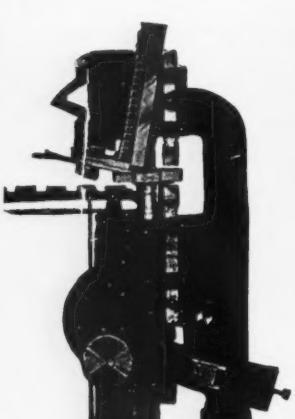
Merchants Chemical Co., Chicago, was awarded the contract on 40,000 pounds trisodium phosphate at 2.745 cents in a recent opening by the Army Quartermaster, Chicago.

◆

Soap Awards

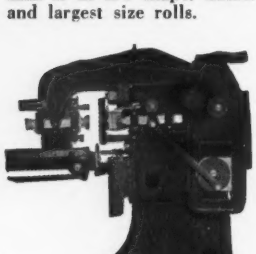
In a recent opening by the Army Quartermaster, St. Louis, the following contracts were awarded: Day & Frick, Philadelphia, 450 pounds grit soap at 3.35 cents; Peck's Products Co., St. Louis, 14,280 pounds laundry soap at 3 cents; Armour & Co., Chicago, 23,000 cakes toilet soap at 2.25 cents.

Special Offerings of SOAP MACHINERY *Completely Rebuilt!*

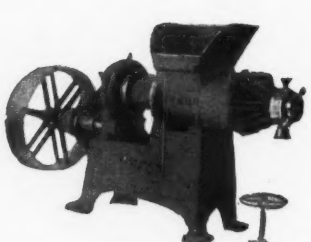


Small size fully automatic Jones toilet soap press. Capacity 150 to 200 small cakes per minute. A real buy at an attractively low price. Has been completely rebuilt in our own shops.

11-A SOAP MILL
This 4-roll granite toilet soap mill is in A-1 shape. Latest and largest size rolls.



4 JONES AUTOMATIC combination laundry and toilet soap presses. All complete and in perfect condition.



Single screw soap plodders with 6, 8, 10 or 12 inch screws. All completely rebuilt and unconditionally guaranteed.

2 Automatic Power Soap Cutting Tables.

INVESTIGATE THESE SPECIAL BARGAINS

•

Johnson Automatic Soap Chip Filling, Weighing and Sealing Machines for 2 lb. and 5 lb. Packages guaranteed in perfect condition.

•

ADDITIONAL REBUILT SOAP MACHINERY

All used equipment rebuilt in our own shops and guaranteed first class condition.

- H-A, 1500, 3000, 4000, 5000 lbs. capacity. Steam Jacketed Crutchers.
- Dopp Steam Jacketed Crutchers, 1000, 1200, 1500 lbs. and 800 gals. capacity.
- Ralston Automatic Soap Presses.
- Scouring Soap Presses.
- Empire State, Dopp & Crosby Foot Presses.
- 2, 3, 4, 5 and 6 roll Granite Toilet Soap Mills.
- H-A 4 and 5 roll Steel Mills.
- H-A Automatic and Hand-Power slabbers.
- Proctor & Schwartz Bar Soap Dryers.
- Blanchard No. 10-A and No. 14 Soap Powder Mills.
- J. H. Day Jaw Soap Crusher.
- 11-A 6, 8 and 10 inch Single Screw Plodders.
- Allbright-Nell 10 inch Plodders.
- Filling and Weighing Machine for Flakes, Powders, etc.
- Steel Soap frames, all sizes.
- Steam Jacketed Soap Remelters.
- Automatic Soap Wrapping Machines.
- Glycerin Evaporators, Pumps.
- Sperry Cast Iron Square Filter Presses, 10, 12, 18, 24, 30 and 36 inch.
- Perrin 18 inch Filter Press with Jacketed Plates.
- Gedge-Gray Mixers, 25 to 6000 lbs. capacity, with and without Sifter Tops.
- Day Grinding and Sifting Machinery.
- Schultz-O'Neill Mills.
- Day Pony Mixers.
- Gardiner Sifter and Mixer.
- Proctor & Schwartz large roll Soap Chip Dryers complete.
- Doll Steam Jacketed Soap Crutchers, 1000, 1200 and 1350 lbs. capacity.
- Day Talcum Powder Mixers.
- All types and sizes—Tanks and Kettles.
- Ralston and H-A Automatic Cutting Tables.
- Soap Dies for Foot and Automatic Presses.
- Broughton Soap Powder Mixers.
- Williams Crutcher and Pulverizer.
- National Filling and Weighing Machines.

Send us a list of your surplus equipment—we buy separate units or complete plants.

NEWMAN TALLOW & SOAP MACHINERY COMPANY

1051 WEST 35th STREET, CHICAGO — Phone Yards 3665-3666

Our Forty Years Soap Experience Can Help Solve Your Problems

Classified Advertising

Classified Advertising—All classified advertisements will be charged for at the rate of ten cents per word, $2.00 minimum, except those of individuals seeking employment where the rate is five cents per word, $1.00 minimum. Address all replies to Classified Advertisements with Box Number, care of *Soap*, 254 West 31st St., New York.

Positions Wanted

Former Chemical Manufacturer, Dr., twenty years experience in waxes, polishes, sanitary and cosmetic products, desires to invest money in sound chemical business, where chemist partner is needed. Also interested joining experienced salesman in new chemical enterprise. Address Box No. 899, care *Soap*.

Chemist: Man with twenty years practical control and research background in chemistry, chiefly in soaps and detergents with large manufacturer, desires to make new connection in the industry. Good practical background for supervising and controlling production. Address Box No. 897, care *Soap*.

Analytical Chemist and Soap Maker, specialist in laundry and textile soaps, dry cleaning and potassium soaps (liquid and paste), sulfonated products and polishes; able to remove Ca, Mg, Fe soaps and proteins from soaps during the boiling process, with other improvements in line of soaps and detergents and many years of experience, wishes new connection. Address Box No. 898, care *Soap*.

Sales Promotion—Man with extensive background in merchandising and advertising in drug and chemical specialties, insecticides, etc., chiefly with two large firms, desires new connection in sales promotion and advertising. For further details, communicate with Box No. 882, care *Soap*.

Soap Expert—Man with 30 years practical experience in soap plant operation, expert on toilet and laundry soaps, is available for part time consultation on cash reduction, quality improvement and other problems. For further details write to Box No. 881, care *Soap*.

Insecticide and Specialty man: Executive for a number of years in charge of specialty department for large company with successful merchandising and sales record, desires new connection. Has specialized in household insecticides, polishes, waxes, cleansers, etc. For further details communicate with Box No. 900, care *Soap*.

BUY CONSOLIDATED REBUILT EQUIPMENT—

and get the benefit of our 23 years experience.

Save TIME and MONEY with these GUARANTEED values.

SELECTED SPECIALS

1—Sargent 54" x 72" single Chilling Roll.
2—Proctor & Schwartz Soap Chip Dryers, steel frame; 1 with single cooling roll.
2—Jones Vertical Automatic Soap Presses.
1—Jones Horizontal Automatic Soap Press.
3—Houchin Plodders, 10", 8".
2—Pneumatic Scale Carton Packaging Units.
2—Automatic Soap Wrapping Machines.

Crutchers	Foot and Automatic Soap Presses	Filter Presses
Soap Kettles	Cutting Tables	Soap Frames
Powder Mixers	Pulverizers	Powder Fillers
Granite Mills	Soap Pumps	Labellers
Plodders	Soap Chippers	Tanks
Slabbers		Boilers

Send for New Illustrated Circular

CONSOLIDATED PRODUCTS CO., INC.
15-21 PARK ROW — NEW YORK, N. Y.
BArclay 7-0600 — Cable Address: Equipment
We buy your idle Machinery—Send us a list.

It will be to your profit to "ASK WECOLINE" before you buy

DISTILLED FATTY ACIDS
Exceptionally Pure and White

COCONUT . . . PALM . . . CORN . . . TEASEED . . . SOY BEAN . . . COTTONSEED . . . LINSEED . . . WHITE OLEIC . . . STEARIC . . . LAURIC . . . CAPRIC . . . are Wecoline specialties.

Confidence will grow as you re-order . . . each shipment will be convincing evidence that Wecoline is a dependable and unique processor and refiner.

Specifications and Samples mailed on request. Also we invite inquiries for Special Process Fatty Acids.

WECOLINE Products, Inc. BOONTON, N.J.
Sales Offices: NEW YORK . . . . . CHICAGO . . . . . BOSTON

TESTED DISINFECTANTS

Guaranteed phenol coefficients

Coal Tar, Coefs 2 to 20
Pine Oil, Coefs 3 and 4
Cresylic, Coef. 2.5 plus

Every batch is tested bacteriologically by F. & D. A. methods by a well known commercial laboratory (name on request).

"GOOD" PRODUCTS at "GOOD" PRICES

MANUFACTURED BY US UNDER CAREFUL LABORATORY CONTROL

POTASH SOAPS

Guaranteed soap content
Uniform consistency
Controlled alkalinity

Liquid Soaps (up to 40%)
Vegetable Oil Soaps
Pine Scrub Soaps (Liquid and Jelly)
Sassafrassy Scrub Soap
Potash Oil Auto Soap
U. S. P. Green Soap

JAMES GOOD, Inc.

Manufacturing Chemists Since 1868

2112 E. Susquehanna Avenue PHILADELPHIA, PA.

We announce development of new type soap colors

PYLAKLORS

They have good fastness to alkali, light, tin. ageing.

The following shades are already available:

Bright Green	Dark Brown
Olive Green	Palm Green
Yellow	Golden Brown
True Blue	Violet

It will pay you to send for testing samples.

PYLAM PRODUCTS CO., INC.

Manufacturing Chemists, Importers, Exporters

799 Greenwich St. New York City

Cable Address: "Pylamco"

Do You Need Special

ROTENONE and DERRIS RESINS?

No matter what your requirements may be the chances are we can supply a suitable product. DERRIS, Inc., raw materials are used in all types of finished insecticides —household, horticultural and agricultural. Investigate the advantages of using these specialties in your sprays and powders.

Derris Powder — Cube Powder
of Finest Grind

DERRIS, Inc.

79 WALL STREET NEW YORK, N. Y.

Calling **WYOMING!**

What is the matter with the Wyoming soap and sanitary chemical industry, our circulation manager wants to know. SOAP & SANITARY CHEMICALS has subscribers in 47 states, but Wyoming is still among the missing. Besides thoroughly covering the U. S. A. we do a fair job abroad. Subscribers numbering 563 in 56 foreign countries bear witness to the international influence of this publication. Annual subscription $3 domestic, $4 foreign.

Superintendent—Man of experience in soapmaking and chemistry desires permanent position with reliable firm. All kinds of soap, powders, and cleansers—and recovery of glycerine. Address Box No. 901, care *Soap*.

Positions Open

Wanted: Soap maker and Superintendent. Must be able to furnish A-1 references and be well versed in manufacture of laundry soaps as well as production end. Give all particulars in first letter. Address Box No. 893, care *Soap*.

Soap Expert—Manufacturer in South America desiring to install process and equipment for manufacturing toilet soaps, requires the permanent services of superintendent. Man should have knowledge of Spanish and be not over 45 years of age. Write full details in Spanish to Box No. 884, care *Soap*.

Wanted: An experienced soap salesman with a knowledge of industrial and bulk, particularly neutral soap business. One who is well acquainted with this type trade and some clientele preferred. Must be willing to travel. Salary and expenses. Please write fully. Address Box No. 902, care *Soap*.

Chemist Wanted: An old and progressive middle west concern wants a man experienced in the manufacture of liquid and oil soaps, disinfectants and waxes. An excellent opportunity for the right man. Please state age and detailed record. Address Box No. 895, care *Soap*.

Sales Manager: Experienced in janitor's supplies to create sales organization. Considerable share in enterprise offered in exchange for such services. Excellent formulae and manufacturing facilities available. Address Box No. 896, care *Soap*.

Miscellaneous

Floor Brushes—We manufacture a very complete line. Catalogue sent upon request. Flour City Brush Company, Minneapolis, Minn., or Pacific Coast Brush Co., Los Angeles, Calif.

Rebuilt Guaranteed Machinery: Crutchers; Plodders; Jones Automatic Soap Press; Foot Presses; Proctor Soap Dryer; 9x24, 12x30, & 16x40 Three Roll Water Cooled Steel Mills; 4 Roll Stone Mill; Johnson Carton Sealers; Powder Fillers; 6 Knife Chipper; Mixers; Grinders; Boiling Kettles; Cutting Tables; Soap Frames; Filters & Filter Presses, etc. Send for Soap Bulletin No. 402. Stein Equipment Corp., 426 Broome St., New York City.

Worth Investigating!

TWIN-CITY WAXES

FOR EVERY PURPOSE

ATTRACTIVELY PRICED FOR THE JOBBING TRADE

SKIDLESS WAX—Waterproof, a superior wax ideal for office, home, dance floors, gymnasium, etc.

WAXES FOR INDUSTRIAL TRADE—Made to meet hard usage—priced to meet competition.

PASTE AND LIQUID RUBBING WAX—for every type of work where high lustre is prime requisite.

Write for Complete Information, Samples, etc.

TWIN-CITY SHELLAC CO.

Makers of the Popular DAN-DEE No-rubbing Floor Wax

334 FLUSHING AVE. BROOKLYN, N. Y.

Bound Volumes of SOAP and SANITARY CHEMICALS

A very few complete bound volumes of SOAP and SANITARY CHEMICALS are available. Those listed below are substantially and attractively bound in blue cloth covered cardboard stamped in gold. We can also supply some individual back copies at 50 cents each. Do you need any to complete your files?

Vol. 3, Sept., 1927 to Aug. 1928—2 sets @ $10.00 ea.
Vol. 15, Jan., 1939 to Dec., 1939—2 sets @ 12.00 ea.

Postage Prepaid in U. S.

MACNAIR-DORLAND CO., Inc.

254 W. 31st STREET NEW YORK

A New Departure In Crutcher Performance

The HUBER ELECTRO PERFECTION CRUTCHER is now available in a new model,—with four forward and reverse speeds. The flexibility in operating technique afforded by this wider choice of crutcher speeds should be decidedly interesting to many soap makers. Available in three sizes,—1,500, 2400 and 3200 pounds.

HUBER MACHINE CO.

"Builders of Good Soap Machinery for the Past 45 Years"

265 46th STREET BROOKLYN, N. Y.

FOUGERE SAVON SUPREME

A FINE PERFUME OIL FOR SOAPS AND ALL SOAP PRODUCTS

FOUGERE SAVON SUPREME

We shall be pleased to forward a sample and full information

COMPAGNIE PARENTO, Inc.

Croton-on-Hudson New York

The Natural Fragrance of the Lilac Flower!

OIL LILAC No. 600

for Liquid Soaps and Shampoos

OUTSTANDING CHARACTERISTICS

1. Twice the odor value
2. One-half the present price
3. Maintains its fragrance in soap longer

ORDER A TRIAL POUND—90¢

SAMPLES AND QUOTATIONS ON REQUEST

F.O.B. NEW YORK USE ¼ OZ. TO GALLON AND UP

Sole Distributors in United States, Canada and Mexico

L. M. CHEMICAL CO.

2295 SECOND AVENUE NEW YORK, N. Y.

For Sale—Small soap business, trade mark, filling and mixing machinery of every type, kettles, wood tanks, sealers, scales, blowing equipment, wrapping machine, compressor, 50 trucks, staple machine, foot press, 1000 racks. Savage Soap Co., Phoenix, New York.

For Sale: Jones Automatic Pin Die Press; 40 H. A. 1200 lb. Soap Frames; H. A. 22" Soap Chipper; P. & S. 3 section Soap Chip Dryer, with 36" roll; Garrigue Glycerine Evaporator, 225 lb. per hour; Crutchers; Tanks; etc. Send for latest bulletins. Brill Equipment Corporation, 183 Varick St., New York, N. Y.

Will Purchase Immediately—Pneumatic Packaging Machine, used for chips, powder, cleanser; also dry mixers, chip dryers, crutchers, and automatic soap press. Address Box No. 894, care *Soap.*

Wanted: Soap chip dryer, Proctor & Schwartz preferable. Blanchard No. 10A soap powder mill or similar type. Address Box No. 877, care *Soap.*

For Sale—Going soap specialty business in the middle-west with complete operating plant for potash soaps, shampoos, shave creams, cosmetics, etc. Long established. Well known. Other business interests require sale. For further details, address Box No. 903, care *Soap.*

HERE'S HOW...

to get at those dirty floors

PECK'S No. 955 VARNISHALL SCRUB;

It Cleans by "LIFT"

Dirt and insoluble matter raised from the floor and held in suspension until wiped or rinsed from the floor—does a thorough job with no danger of marring surface.

A FOUR STAR FLOOR SOAP

★ High Soap Content
★ Non-Alkaline
★ A Suspension Cleaner
★ Safe on Any Surface

Packed . . . Drums . . . ½ Drums . . . ¼ Drums . . . 10 Gal. Tins 5 Gal. Tins

THE MARK OF PREMIUM QUALITY SOAPS

Peck's PRODUCTS COMPANY

5224-40 NORTH 2nd ST., ST. LOUIS, MO.
NEW YORK . . . . KANSAS CITY

Manufacturers for Jobbers Exclusively

The Chemistry of Laundry Materials

by D. N. JACKMAN

A discussion of materials used in the laundry, starting with water and going through alkalies, soaps, bleaches, starches, etc. The book contains valuable information on the chemistry of laundry materials, not stopping with the well-established products but discussing as well the newer detergents and assistants for scouring and washing, giving information on the so-called synthetic soaps and the other products whch now form the great number of newer detergents. 240 pages, $2.50 per copy.

Send Check with Order

MACNAIR-DORLAND CO.

254 West 31st Street New York City

List of other books on request

Valencia Pumice

Reg. U.S. Pat. Off.

an

AMERICAN PRODUCT

Similar to Italian Pumice
In physical and chemical properties.

Write for samples and 12 page booklet of information

BARNSDALL TRIPOLI CORPORATION
PUMICE DIVISION
(Subsidiary Barnsdall Oil Co).
SENECA, MISSOURI, U. S. A.

F. & S.

Quality Colors
for
TOILET SOAPS
LIQUID SOAPS
TOILET PREPARATIONS

Long experience enables us to produce colors for all types of soaps.

If you have a shade you want matched send us a sample. We have complete facilities for matching.

Liquid soap colors a specialty—send for samples of F. & S. greens and ambers.

FEZANDIE & SPERRLE, Inc.
205 FULTON STREET
NEW YORK, N. Y.
Import—Manufacture—Export

SWEEPING COMPOUND
FOR JOBBING TRADE ONLY

IT'S RED
KLEENSWEEP
THE PATENTED SWEEPING COMPOUND WITH THE SISAL BASE

IT'S GREEN
SANISWEEP
THE SWEEPING COMPOUND WITH THE SAWDUST BASE

IT'S WHITE
NEVASLIP
THE SWEEPING COMPOUND WITH THE MINERAL BASE

OUR PREPARATIONS WILL HELP YOU INCREASE YOUR SALES ON SWEEPING COMPOUND

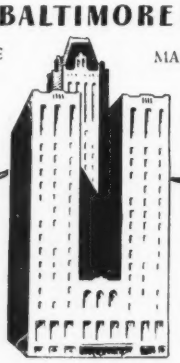
SWEEPING COMPOUND MNFR'S CO. OF N. Y., INC.
421 BROOME STREET, NEW YORK

CRESYLIC ACID
• • •
HIGH BOILING TAR ACIDS
• • •
TAR ACID
CREOSOTE OIL
• • •
NAPHTHALENE
• • •

MIRVALE CHEMICAL CO., Ltd.
MIRFIELD YORKS, ENG.

ON your way to see the World of Tomorrow . . . pause for a glimpse of this old city's glorious past. Baltimore—with its roots deep in the proud history of our nation, has matched our country's modernization stride for stride—but the Lord Baltimore, newest, finest hotel in the city, has not lost an appreciative sense of what old-time Baltimore hospitality meant.

LORD BALTIMORE *Hotel*
BALTIMORE MARYLAND



BREAK YOUR TRIP WITH A PLEASANT STOPOVER IN BALTIMORE

Raw Materials and Equipment

NOTE: This is a classified list of the companies which advertise regularly in SOAP. It will aid you in locating advertisements of raw materials, bulk and private brand products, equipment, packaging materials, etc., in which you are particularly interested. Refer to the Index of Advertisements, page 137, for page numbers. *"Say you saw it in SOAP."*

ALKALIES

American Cyanamid & Chemical Corp.
John A. Chew, Inc.
Columbia Alkali Co.
Diamond Alkali Co.
Dow Chemical Co.
Eastern Industries
Hooker Electrochemical Co.
Innis, Speiden & Co.
Michigan Alkali Co.
Niagara Alkali Co.
Solvay Sales Corp.
Jos. Turner & Co.
Warner Chemical Co.
Welch, Holme & Clark Co.

BULK AND PRIVATE BRAND PRODUCTS

Ampion Corporation (Soaps and Sanitary Chemicals)
Associated Chemists, Inc. (Insecticides)
Baird & McGuire, Inc. (Disinfectants)
Buckingham Wax Corp. (Wax Products)
Candy & Co. (Wax Products)
Chemical Supply Co. (Disinfectants, etc.)
Clifton Chemical Co. (Soaps and Sanitary Chemicals)
Davies-Young Soap Co. (Soaps and Floor Wax)
Federal Varnish Co. (Wax Products)
Fuld Bros. (Soaps and Sanitary Chemicals)
James Good, Inc. (Sanitary Chemicals)
Higley Chemical Co. (Floor Seal)
Hockwald Chemical Co. (Sanitary Chemicals)
Hysan Products Co. (Sanitary Chemicals)
Koppers Co. (Disinfectants)
Kranich Soap Co. (Potash Soaps)
Onalim Co. (Potash Soaps)
Pecks Products Co. (Soaps and Sanitary Chemicals)
Philadelphia Quartz Co. (Detergents)
Reilly Tar & Chem. Co. (Floor Seals)
Geo. A. Schmidt & Co. (Soaps)
Superior Soap Corp. (Soaps and Waxes)
Sweeping Compound Mfrs. Co. (Sweeping Compound)
Twin City Shellac Co. (Wax Products)
Uncle Sam Chemical Co. (Sanitary Chemicals)
T. F. Washburn Co. (Wax Products)
White Tar Co. (Disinfectants, etc.)
Windsor Wax Co. (Wax Products)

CHEMICALS

American-British Chemical Supplies
American Cyanamid & Chemical Corp.
Chemical Mfg. & Dist. Co.
John A. Chew, Inc.
Columbia Alkali Co.
Cowles Detergent Co.
Diamond Alkali Co.
Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Eastern Industries
General Chemical Co.
Hooker Electrochemical Co.
Industrial Chemical Sales Div.
Innis, Speiden & Co.
Michigan Alkali Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Philadelphia Quartz Co.
Rohm & Haas Co.
Reilly Tar & Chemical Corp.
Solvay Sales Corp.
Standard Silicate Co.
Jos. Turner & Co.
Victor Chemical Works
Warner Chemical Co.
Welch, Holme & Clark Co.

COAL TAR RAW MATERIALS

(Cresylic Acid, Tar Acid Oil, etc.)

American-British Chemical Supplies
American Cyanamid & Chemical Corp.
Baird & McGuire, Inc.
Barrett Co.
Innis, Speiden & Co.
Koppers Co.
Mirvale Chemical Co.
Monsanto Chemical Co.
Pittsburgh Coal Carbonization Co.
Reilly Tar & Chemical Co.
White Tar Co.

COLORS

Fezandie & Sperrle
Interstate Color Co.
Pylam Products Co.
Tamms Silica Co.

CONTAINERS AND CLOSURES

American Can Co. (Tin and Fibre Cans, Steel Pails)
Anchor-Hocking Glass Corp. (Closures and Bottles)
Continental Can Co. (Tin Cans)
Crown Can Co. (Tin Cans and Steel Pails)
National Can Co. (Tin Cans)
Owens-Illinois Glass Co. (Bottles and Closures)
Williams Sealing Corp. (Closures)

DEODORIZING BLOCK HOLDERS

Clifton Chemical Co.
Fuld Bros.
Garnet Chem. Corp.
Hysan Products Co.

INSECTICIDES, SYNTHETIC

American Cyanamid & Chemical Corp.
Associated Chemists, Inc.
Dodge & Olcott Co.
John Powell & Co.
Rohm & Haas Co.
U. S. Industrial Chem. Co.
Whitmire Research Corp.

MACHINERY

Anthony J. Fries (Soap Dies)
Houchin Machinery Co. (Soap Machinery)
Huber Machine Co. (Soap Machinery)
R. A. Jones & Co. (Automatic Soap Presses and Cartoning Machinery)
Karl Kiefer Machine Co. (Filling Machinery)
Koppers Company (Coal Tar Plants, Power Plants, Valves, Castings, Pipe, Tanks)
Mixing Equipment Co. (Tanks, Mixers)
Proctor & Schwartz (Dryers)
C. G. Sargent's Sons Corp. (Dryers)
Sprout, Waldron & Co. (Mixing, Conveying, etc.)
Stokes & Smith Co. (Packaging Machy.)

Feature the new 4-in-1* Applicator in connection with your self-polishing wax, varnishes, seals, etc.

It will make your customers and prospects more satisfied with your own products.

Don't be satisfied with anything less than the newest and best.

The 4-in-1 Applicator is the cheapest in the long run.

* Patent Pending

Send for Samples and Literature

AMERICAN STANDARD MFG. CO.
2509-13 S. Green St. Chicago, Ill.

TAR ACID OIL

for use in

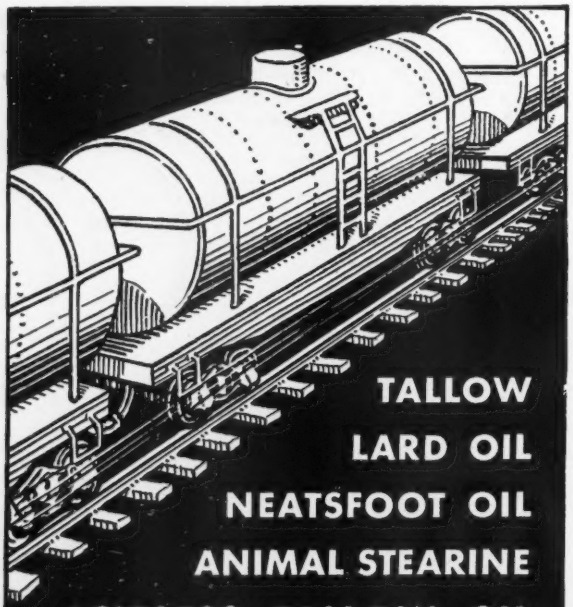
DISINFECTANTS

Makes White Emulsions.
Unusually High in Tar Acids

MANUFACTURED FROM
LOW TEMPERATURE COAL TAR

PITTSBURGH COAL CARBONIZATION CO.
H. W. Oliver Building Pittsburgh, Pa.

Producers and Refiners of Coal Tar and Its Products.



TALLOW
LARD OIL
NEATSFOOT OIL
ANIMAL STEARINE
ACIDLESS TALLOW OIL

Prompt Delivery—Drums, Barrels, or Tank Cars.

INDEPENDENT MANUFACTURING CO.
Bridesburg P. O. Philadelphia, Pa.

Does your "routed" copy of SOAP reach your desk a week or more late? A personal subscription will eliminate this annoyance. You will get your copy *promptly*. It will be *yours*. Start this month.

Annual Subscription:
$3.00 *Domestic*
$4.00 *Foreign*

LATE?

MacNair-Dorland Co.
254 W. 31st St.
New York, N. Y.

Raw Material and Equipment Guide

NOTE: This is a classified list of the companies whichadvertise regularly in SOAP. It will aid you in locating advertisements of raw materials, bulk and private brand products, equipment, packaging materials, etc., in which you are particularly interested. Refer to the Index of Advertisements, page 137, for page numbers. *"Say you saw it in SOAP."*

MACHINERY, USED

Consolidated Products Co.
Newman Tallow & Soap Machinery Co.

MISCELLANEOUS

American Standard Mfg. Co. (Wax Applicator and Mops)
Anchor-Hocking Glass Corp. (Metal Caps)
Barnsdall Tripoli Co. (Pumice and Tripoli)
Crosby Naval Stores, Inc. (Pine Oil and Rosin)
Dow Chemical Co. (Germicides, Agricultural Insecticides, Fumigants)
Filtrol Corp. (Purifying and Decolorizing Clay)
Industrial Chemical Sales Div. (Decol. carbon, Chalk)
Innis, Speiden & Co. (Fumigants)
Koppers Company (Coal, Coke, Roofing Materials)
Newport Industries, Inc. (Pine Oil and Rosin)
Pennsylvania Refining Co. (White Oils)
Pylam Products Co. (Lathering Agent)
Reilly Tar & Chem. Co. (Preservatives)
Steryl Prods. Corp (Toilet Deodorizer)
Tamms Silica Co. (Silica, Volcanic Ash, etc.)
Victoria Paper Mills Co. (Toilet Tissues)

OILS, FATS, AND FATTY ACIDS

Eastern Industries
Emery Industries, Inc.
Independent Manufacturing Co.
Industrial Chemical Sales Div.
Newman Tallow & Soap Machinery Co.
Orbis Products Corp. (Stearic Acid)
Wecoline Products Co.
Welch, Holme & Clark Co.

PARADICHLORBENZENE

John A. Chew, Inc.
Dow Chemical Co.
E. I. du Pont de Nemours & Co.
Hooker Electrochemical Co.
Monsanto Chemical Co.
Niagara Alkali Co.
Solvay Sales Corp.
Jos. Turner & Co.

PERFUMING MATERIALS

American-British Chemical Supplies
Aromatic Products, Inc.
Compagnie Parento
Dodge & Olcott Co.
Dow Chemical Co.
P. R. Dreyer Inc.
E. I. Du Pont de Nemours & Co.
Felton Chemical Corp.
Firmenich & Co.
Fritzsche Brothers, Inc.
General Drug Co.
Givaudan-Delawanna, Inc.
L. M. Chemical Co.
Magnus, Mabee & Reynard, Inc.
Monsanto Chemical Co.
Norda Essential Oil & Chemical Co.
Orbis Products Corp.
Rifa—New York, Inc.
Ungerer & Co.
Van Ameringen-Haebler, Inc.
Albert Verley, Inc.

PETROLEUM PRODUCTS

Deodorized Insecticide Base, White Oils, Petrolatum, Paraffine Oils, Residues, etc.)

Atlantic Refining Co.
General Petroleum Corp.
Pennsylvania Refining Co.
Petroleum Specialties Inc.
L. Sonneborn Sons, Inc.

PHOSPHATES

Trisodium, Sodium Pyrophosphate, etc.)

American Cyanamid & Chemical Corp.
John A. Chew, Inc.
E. I. du Pont de Nemours & Co.
General Chemical Co.
Monsanto Chemical Works
Victor Chemical Works
Warner Chemical Co.

PYRETHRUM AND ROTENONE PRODUCTS

Insect Flowers and Powder, Pyrethrum Extract, Derris Products)

Associated Chemists, Inc.
Derris, Inc.
Dodge & Olcott Co.
S. B. Penick & Co.
R. J. Prentiss & Co.
McCormick & Co.
McLaughlin, Gormley, King Co.
John Powell & Co.
Whitmire Research Corp.

SILICATES

E. I. du Pont de Nemours & Co.
General Chemical Co.
Philadelphia Quartz Co.
Standard Silicate Co.

SOAP DISPENSERS

Ampion Corp.
Bobrick Mfg. Co.
Clifton Chemical Co.
Fuld Bros.
Garnet Chem. Corp.
Hockwald Chemical Co.
Presto Mfg. Co.

SPRAYERS

Breuer Electric Mfg. Co. (Electric)
Dula Manufacturing Co. (Electric Steam)
Fumeral Co. (Pressure Sprayers, Steam, Air, CO_2 gas)

WAXES AND GUMS

Carnauba, Shellac, Candelilla, etc.)

American Cyanamid & Chem. Corp.
T. G. Cooper & Co.
Innis, Speiden & Co.
Lenape Trading Co.
The Mac Lac Co. (Shellac)
Mantrose Corp. (Shellac)
Twin City Shellac Co. (Shellac)

STRIKE UP THE BAND
and
SPARE NO EFFORT TO PROMOTE
NEW SALES WITH

BUCKINGHAM
BOWLING ALLEY POLISH & CLEANER

Get in on the fast growing demand for this and other Buckingham Products
(SOLD THROUGH DISTRIBUTORS ONLY)
SEND FOR SAMPLES AND QUOTATIONS.

BUCKINGHAM WAX CORP.
Van Dam Street and Borden Avenue — Long Island City, New York

PETROLEUM SULPHONATES
(Naphthenic or Mahogany Soaps)

FILTRABLEND
Line of ready-made bases for soluble oils, textile oils, metal cutting oils, wax emulsification, etc.

FILTRONA
Highly purified dispersing agent for all technical oil emulsions.

FILTRAWAX
Pure White — Amorphous Structure

Ask for Complete Information

Distributors Wanted in Several Territories

PETROLEUM SPECIALTIES, INC.
570 LEXINGTON AVE. — NEW YORK

SECOND EDITION
of
MODERN COSMETICS
by FRANCIS CHILSON

Complete revision of text, addition of many new chapters, revised and new formulas all rigidly tested.

The first complete and authoritative text on production procedure for all cosmetics, makes an invaluable new addition to this second edition.

$6.00 PER COPY
(PLEASE REMIT WITH ORDER)

Mac NAIR-DORLAND COMPANY
254 West 31st St., NEW YORK, N. Y.

202 Common Household Pests of North America
by Hugo Hartnack

Just fresh from the press is this new text,—invaluable to the manufacturer of insecticides and the exterminator, dealing with common household insect pests. The contents total 352 pages, with some 300 illustrations.

$3.75 Per Copy
Send Check with Order to

MacNair-Dorland Co.
254 W. 31st St. — New York, N. Y.

Professional Directory

Skinner & Sherman, Inc.

246 Stuart Street, Boston, Mass.

Bacteriologists and Chemists

Disinfectants tested for germicidal value or phenol coefficient by any of the recognized methods.

Research—Analyses—Tests

H. A. SEIL, Ph.D. E. B. PUTT, Ph.C., B.Sc.

SEIL, PUTT & RUSBY, INC.

Analytical and Consulting Chemists

Specialists in the Analysis of Organic Insecticides, Pyrethrum Flowers, Derris Root, Barbasco, or Cube Root—Their Concentrates and Finished Preparations

DRUGS — ESSENTIAL OILS — SOAP

16 East 34th Street, New York, N. Y.

STILLWELL AND GLADDING, Inc.

Analytical and Consulting Chemists

Members Association of Consulting Chemists and Chemical Engineers

130 Cedar Street New York City

Soaps • Waxes • Polishes
Detergents • Disinfectants

Analysis Research
Formula Development

Hochstadter Laboratories
INCORPORATED

254 West 31st St. New York City

KILLING
strength of Insecticides
by PEET GRADY METHOD
PYRETHRINS in PYRETHRUM FLOWERS
(by Gnadinger or Seil Method)
We raised and killed more than 1 million flies in the last 2 years
ILLINOIS CHEMICAL LABORATORIES, INC.
GRIDLEY, ILLINOIS

CONSULTANTS

offering their services to manufacturers of soaps and sanitary specialties should apprise the industry of their facilities through this professional card department. SOAP reaches 4,000 firms needing help of a professional nature.

FOSTER D. SNELL, INC.

Our staff of chemists, engineers and bacteriologists with laboratories for analysis, research, physical testing and bacteriology are prepared to render you

Every Form of Chemical Service

305 Washington Street Brooklyn, N. Y.

Patents—Trade Marks

All cases submitted given personal attention
Form "Evidence of Conception" with instructions for use and "Schedule of Government and Attorneys' Fees"—Free

Lancaster, Allwine & Rommel
PATENT LAW OFFICES
Suite 402, Bowen Building Washington, D. C.

ALAN PORTER LEE, Inc.

Contracting and Consulting Engineers

Design and Construction of Equipment and Plants for Producing and Processing Fats, Oils, Soaps and Related Products

136 LIBERTY STREET, NEW YORK, N. Y.
Cable Address: "ALPORTLE", New York

Refer To Your 1940

BLUE BOOK

for F.D.A. Method for Testing of Disinfectants and Antiseptics.

Official N.A.I.D.M. Method for Testing and Grading of Insecticides.

Free with a $3.00 subscription to SOAP.
$4.00 Foreign

MAC NAIR-DORLAND CO.

Publishers

254 W. 31st Street New York, N. Y.

CONSULTANTS

offering their services to manufacturers of soaps and sanitary specialties should apprise the industry of their facilities through this professional card department. SOAP reaches 4,000 firms needing help of a professional nature.

Official Test Insecticide...

SUPPLIES of 1940 Official Test Insecticide (O.T.I.) are available for immediate shipment to any laboratory, firm or individual from the office of the National Association of Insecticide & Disinfectant Manufacturers. The 1940 O.T.I. is required for current testing by the official Peet-Grady Method under the specifications for household insect spray of the National Bureau of Standards and the N.A.I.D.M. Further information may be obtained from the Association office.

▼

National Association of

Insecticide & Disinfectant Manufacturers, Inc.

110 East 42nd Street New York

OFFICERS

President ..... W. J. ZICK, Stanco, Inc., New York
First Vice-President ..... JOHN CURLETT, McCormick & Co., Baltimore
Second Vice-President .... H. A. NELSON, Chemical Supply Co., Cleveland
Treasurer ..... JOHN POWELL, John Powell & Co., New York
Secretary ..... IRA P. MACNAIR, MacNair-Dorland Co., N. Y.

BOARD OF GOVERNORS

GORDON M. BAIRD
Baird & McGuire, Inc., Holbrook, Mass.
J. L. BRENN ... Huntington Labs., Inc., Huntington, Ind.
N. J. GOTHARD ... Sinclair Refining Co., E. Chicago, Ind.
H. W. HAMILTON ..... White Tar Co., Kearny, N. J.
DR. E. G. KLARMANN
Lehn & Fink, Inc., Bloomfield, N. J.
WALLACE THOMAS ..... Gulf Refining Co., Pittsburgh
DR. E. G. THOMSSEN . J. R. Watkins Co., Winona, Minn.
CLARENCE WEIRICH .. C. B. Dolge Co., Westport, Conn.
R. H. YOUNG .... Davies-Young Soap Co., Dayton, O.

Index to Advertisers

For product classification see pages **131** *and* **133**

*For further details see announcement in 1940, SOAP BLUE BOOK

*American-British Chemical Supplies 58
American Can Co. 21
American Cyanamid & Chemical Co. ..... Sept.
American Standard Mfg. Co. 132
*Ampion Corp. 12
Anchor-Hocking Glass Corp. 100
Aromatic Products, Inc. 78
Atlantic Refining Co. 89

*Baird & McGuire, Inc. 90
Barnsdall Tripoli Co. 129
Barrett Co. 72
Bobrick Mfg. Co. 134
*Breuer Electric Mfg. Co. 112
Buckingham Wax Corp. 134

*Candy & Co. ..... Sept.
Chemical Supply Co. 118
John A. Chew, Inc. ..... Sept.
*Clifton Chemical Corp. 19
*Columbia Alkali Co. ..... Sept.
Compagnie Parento 128
*Consolidated Products Co. 125
*Continental Can Co. ..... Insert bet. 10 & 11
Cowles Detergent Co. ..... Sept.
Crosby Naval Stores, Inc. 54
Crown Can Co. 88

*Davies-Young Soap Co. 4, 17
*Derris, Inc. 126
Diamond Alkali Co. 18
*Dodge & Olcott Co. 52, 98
*Dow Chemical Co. ..... Sept.
P. R. Dreyer, Inc. 50
Dula Mfg. Co. 118
*E. I. DuPont de Nemours Co. 6, 16, 80

*Eastern Industries 38
*Electro Bleaching Gas Co. 14
Emery Industries, Inc. ..... Sept.

*Federal Varnish Co. 122
*Felton Chemical Co. 9, 81
Fezandie & Sperrle 130
Filtrol Corp. ..... Sept.
*Firmenich & Co. ..... Sept.
Anthony J. Fries ..... Sept.
*Fritzsche Brothers, Inc. 46, 47
*Fuld Brothers 3
Fumeral Co. ..... Sept.

*General Chem. Co. 20
*General Drug Co. 13
*Givaudan-Delawanna, Inc. ..... Front Cover, 87
James Good, Inc. 126

Higley Chemical Co. 112
Hochstadter Laboratories 135
Hockwald Chemical Co. ..... Sept.
*Hooker Electrochemical Co. ..... Sept.
*Houchin Machinery Co. 66
Huber Machine Co. 128
*Hysan Products Co. 7

Illinois Chemical Labs. 135
Independent Mfg. Co. 132
*Industrial Chemical Sales Division
W. Va. Pulp & Paper Co. 60
*Innis-Speiden & Co. 54
Interstate Color Co. ..... Sept.

R. A. Jones & Co. 22

Karl Kiefer Machine Co. 70
*Koppers Co. 86
Kranich Soap Co. 120

Lancaster, Allwine & Rommel 135
*A. P. Lee 135
Lenape Trading Co. ..... Sept.
Lord Baltimore Hotel 130
L. M. Chemical Co. 128

The Mac Lac Co. 116
Magnus, Mabee & Reynard, Inc. 77
Mantrose Corp. 120
Manufacturing Chemist ..... Sept.
*McCormick & Co. 104
*McLaughlin Gormley King Co. ..... Back Cover
Michigan Alkali Co. 8
Mirvale Chem. Co. 130
*Mixing Equipment Corp. ..... Aug.
Monsanto Chemical Corp. 10

*National Can Co. 79
*Newman Tallow & Soap Machinery Co. 124
Newport Industries, Inc. 56
*Niagara Alkali Co. 14
Norda Essential Oil & Chemical Co. 82

Onalim Co. 128
*Orbis Products Co. 16
Owens-Illinois Glass Co. ..... Sept.

Pecks Products Co. 129
*S. B. Penick & Co. 102
Petroleum Specialties, Inc. 134
Philadelphia Quartz Co. 64
*Pittsburgh Coal Carbonization Co. 132
*John Powell & Co. 75
R. J. Prentiss & Co. 83
Presto Mfg. Co. 132
*Proctor & Schwartz, Inc. 72
*Pylam Products Co. 126

*Reilly Tar & Chemical Co. 116
Rifa—New York, Inc. 56
*Rohm & Haas Co. 76

*C. G. Sargent's Sons Corp. ..... Sept.
George A. Schmidt & Co. ..... Sept.
Seil, Putt & Rusby 135
Shell Oil Co. 58
*Skinner & Sherman 135
*Foster D. Snell 135
*Solvay Sales Corp. ..... Second Cover
*L. Sonneborn Sons 110
Sprout, Waldron & Co. ..... Sept.
Standard Silicate Co. 18
Steryl Products Corp. ..... Aug.
Stillwell & Gladding 135
*Stokes & Smith Co. 68
*Superior Soap Co. ..... July
Sweeping Compound Mfg. Co. 130

Tamms Silica Co. ..... Sept.
*Tar & Chem. Division Koppers Co. 86
Jos. Turner & Co. 38
Twin City Shellac Co. 127

*Uncle Sam Chemical Co. ..... Sept.
Ungerer & Co. ..... Third Cover
U. S. Industrial Chem. Co. 48

*Van Ameringen-Haebler, Inc. 15, 85
*Victor Chemical Works 44
Victoria Paper Mills Co. ..... Sept.

*Warner Chemical Co. 42
*T. F. Washburn Co. 110
*Wecoline Products Co. 125
*Welch, Holme & Clark Co. 52
*White Tar Co. of N. J. 86
Williams Sealing Corp. 108
Windsor Wax Co. 127

Every effort is made to keep this index free of errors, but no responsibility is assumed for any omission.

Around Jones' Barn...

DON'T go "all around Jones' barn" in advertising to the people you want to sell . . . give a thought to the use of representative trade papers to avoid these costly advertising detours . . . to carry your advertising message DIRECT and STRAIGHT to the real buyers in industry without unnecessary waste and expense.

In the field of soaps, cleansers, sanitary chemicals, and allied products, you can get the most for your advertising dollar in

SOAP *and Sanitary Chemicals*

254 WEST 31st STREET NEW YORK

Member of the A.B.C.

Tale Ends

DOWN east in Maine, game wardens during the past summer distributed naphthalene moth balls to farmers to keep hordes of deer from damaging the potato crop. Deer do not like naphthalene, reports say, and the stunt worked out successfully. The report does not state how the naphthalene was applied to the deer, via shotgun or otherwise.

* * *

A manufacturer on the West Coast calls the newest addition to his line the "champagne of liquid soaps." This modest statement is at least different from the usual claims.

* * *

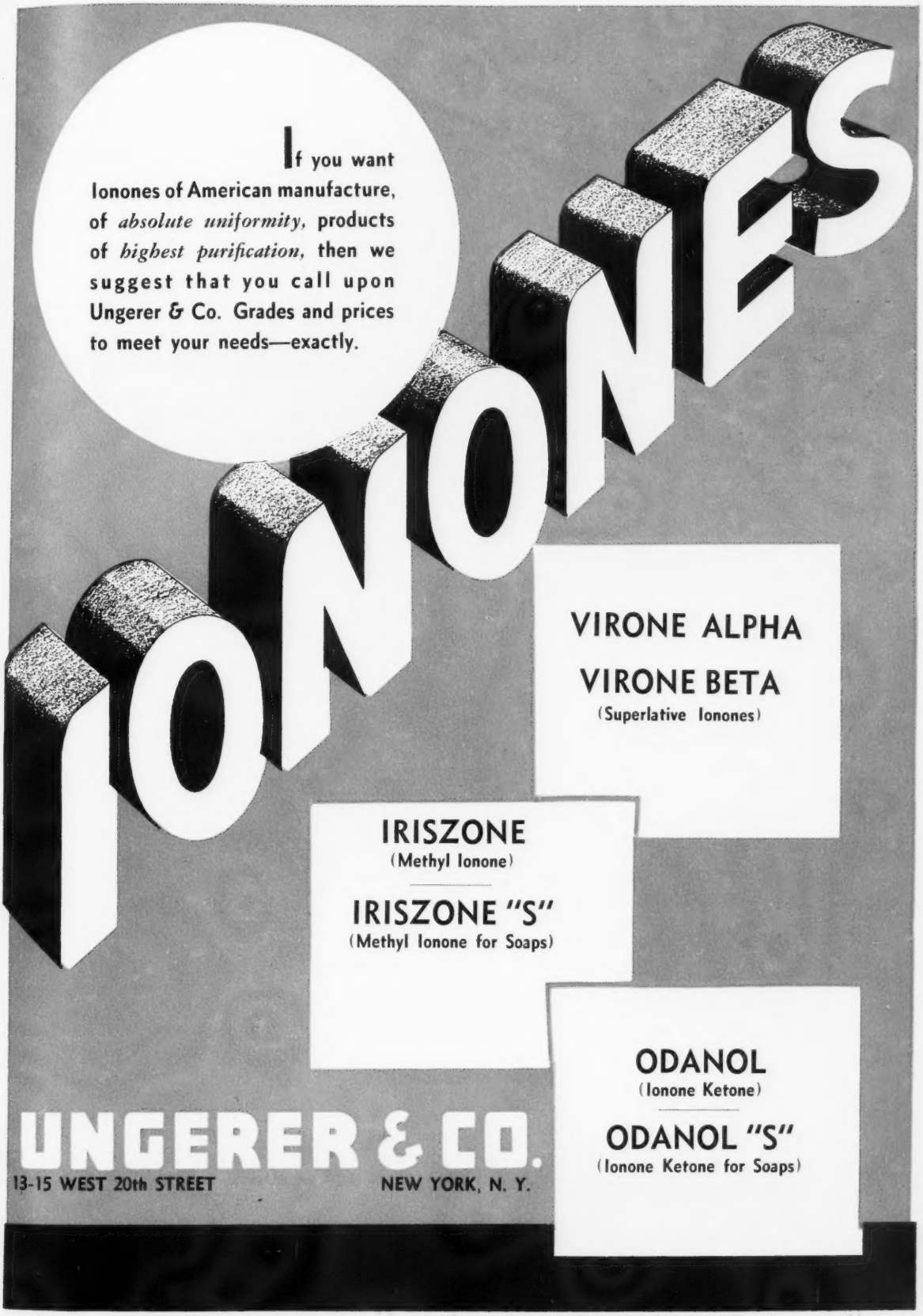
The new Department of Agriculture regulations covering labeling requirements for pyrethrum powder and pyrethrum mixtures went into effect Sept. 1. Are your insect powder, roach powder, etc., and other pyrethrum items, *now being shipped*, labeled correctly?

* * *

When you renew your subscription to *Soap & Sanitary Chemicals*, why not renew it for two years and save a dollar? Send your check for five dollars along with that subscription renewal notice and we will do the rest. And you will also receive the 1941 and 1942 *Blue Books*.

* * *

At present prices for fats and oils, it would seem that full storage tanks at all soap plants represent the part of wisdom even though the visible supply with a few exceptions is large.


If you want Ionones of American manufacture, of *absolute uniformity,* products of *highest purification,* then we suggest that you call upon Ungerer & Co. Grades and prices to meet your needs—exactly.
IONONES
VIRONE ALPHA
VIRONE BETA
(Superlative Ionones)
IRISZONE
(Methyl Ionone)
IRISZONE "S"
(Methyl Ionone for Soaps)
ODANOL
(Ionone Ketone)
ODANOL "S"
(Ionone Ketone for Soaps)
UNGERER & CO.
13-15 WEST 20th STREET
NEW YORK, N. Y.

GOOD NEWS:

PYROCIDE 20
PRICE REDUCED

GOOD NEWS because you can forget substitutes. There has been *only one reason for ever using them*—that was cost. Today, due to an enlightened policy on the part of the growers of Kenya, the cost of Kenya Pyrethrum flowers has been materially reduced. Consequently, you can buy Pyrocide 20 at a lower price!

For 20 years it has been generally recognized that an oil extract of pyrethrum makes the best household spray. Although many efforts have been made to develop substitutes to do the work of pyrethrum, no substitute has been discovered that has all the valuable properties of pyrethrins.

Consumers get better results, are better satisfied with insecticides made from Pyrocide 20 than from less effective substitutes or imitations. Use Pyrocide 20, the original standardized concentrate, and *watch your sales increase.*

Remember, now you can buy Pyrocide 20, Deodorized . . . Clarified, the Purest Form of Pyrethrins Commercially Available at a lower price than for several years.

Pyrocide 20 contains 2.5% pyrethrins by weight (Seil method), equivalent to 2.0 grams per 100 cc.

Write *today* for complete information and new prices.

McLAUGHLIN GORMLEY KING COMPANY
Minneapolis, Minnesota

PYROCIDE 20

THE PUREST FORM OF PYRETHRINS COMMERCIALLY AVAILABLE